The Builder.

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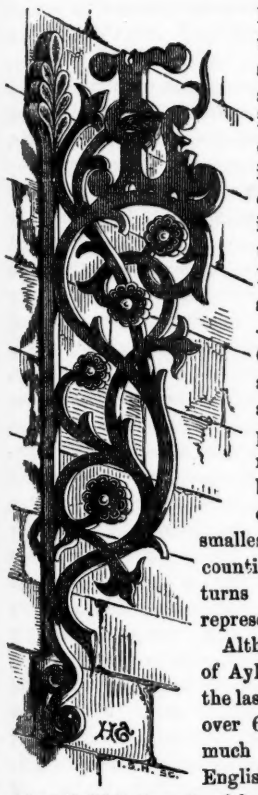
Buckinghamshire: Condition of the Agricultural Districts.



LEAVING for a time the closely-packed residents of towns, we are led to make some inquiries into the condition of things in the agricultural district around Buckingham. A branch of the North-Western Railway line—straight as an arrow—brings us from Cheddington Station, a place at present in a sad state of incompleteness and bad roadways, to Aylesbury, the county town of Bucks, one of the smallest of the English counties, but which returns five members to represent it in Parliament.

Although the population of Aylesbury, according to the last census, is not much over 6,000, the town has much importance in old English history. In the ancient British days it withstood assailants until the year 571, when it was reduced by Cuthwolf, the brother of the King of the West Saxons. After that the town derived great fame from Eadburg and her sister Edith, who were, as tradition says, two holy virgins, the daughters of a king or Mercian prince. Aylesbury became much frequented in consequence of the holiness of St. Edith, and the town was allotted to her as a dowry by her father. The particulars in connexion with this lady seem rather vague; but about the beginning of the seventh century the town became famous as the burial-place of St. Osyth, who was born near here, and murdered in Essex. She is said to have been contracted in marriage to a king of the East Angles, but on the day of her espousal retired to lead a religious life. She built a monastery, and suffered martyrdom during one of the incursions of the Danes. The remains of this lady, who, according to the tradition, was beheaded near the bath she had been accustomed to frequent, were interred in the church at Aylesbury, and a religious house was erected to her memory on the site where the present rectory-house now is. William the Conqueror seems to have done mischief here, for the lands were taken from the original owners, and given to a favourite of the ruler, under the tenure of providing straw for his bed three times a year, three eels in winter, and three geese in summer. Through several centuries the town of Aylesbury kept its place, and in the reign of Queen Mary, 1553-4, it was incorporated by charter, and still retains the privilege of returning two members to Parliament.

Turning, however, from things of old time to those of the present, it should be mentioned that Aylesbury is a pleasant little town, which stands on an elevation, and might, if all were rightly managed, be one of the most healthy spots in England. The death-rate in comparison with that of some other places is not excessive, being about twenty-five in the thousand of the population. Right sanitary measures would reduce those deaths to about nineteen or twenty in the thousand; and it is with great satisfaction we find that earnest men in this little town are striving in the right way to effect improvement. For instance, the town has been provided with main sewers; and there is a chance of testing the value of town sewage, and the right way of managing it. Respecting the extent to which the convenience of drainage has been made available, we will by-and-by remark. It is, however, evident that there are men in Aylesbury at work, not especially connected with agriculture, who are anxious to make this town what it should be. Go where you may in the neighbourhood you hear the names of the Rothschilds mentioned in connexion with all good works. On the land in their possession the cottages of the labourers are not demolished without the provision of others of a better kind. On the Creslam estate, which is said to have some of the finest land in all England for cattle-feeding, the person who has possession, Mr. or Mrs. Rowland, has levelled the cottage dwellings to the ground and put none in their place: this, however, is a matter for observation hereafter.

The new Infirmary has an excellent site: on all sides are pleasant views, and the air is bracing and healthy. The colour of the foliage which is left, the grass, the bright rich brown of the feathers of the sparrows, show how comparatively pure the air here is. The wards are lighted from each side, and at the end of each a large circular-headed window affords the opportunity of a fine view over the adjacent country. The ceiling and walls throughout the building are of Parian cement, which is polished as bright as marble; the floor is of polished oak; all the furniture is of the same material, so that there can be but little chance of the absorption of impurities, as was the case in the last hospital here and in the old *Dreadnought* ship in the Thames. No cooking of any kind is allowed in the sick wards; and sculleries and places for preserving the provisions of patients are expressly provided. The closets are also so arranged that contamination of the atmosphere of the wards can scarcely happen.

The walls of the wards are of a delicate rose colour, which is cheerful to the eye. While in the old hospital the cures were few, in the new building the results of treatment have been very satisfactory. The reception-room for out-door patients, by the way, is not satisfactory, and should at once be altered.

The dilapidated condition of many of the cottages in various parts of Aylesbury, is extraordinary: we would especially notice some at no great distance from the church. Spring Gardens, Whitehall, as the locality is named, is one of those neglected places. Here are several dwellings, some of which stand in rows of three or four houses, each consisting of a small room on the basement, and a still smaller apartment above. We give a sketch of one of those dwellings;* the yard in front is partly paved in an irregular manner, that does not prevent the absorption of the refuse which is thrown here. In some instances the broken and dilapidated spouts serve for the collection of part of the rain-water in small casks, but the chief portion runs from the eaves and sinks into the basements of the houses. The water for domestic purposes is obtained from wells, some of which are provided with rollers, ropes, and buckets: in other cases, however, there is nothing over the top of the well except some broken boards. Although sewers have been carried through the chief thoroughfares, and the gully-holes carefully trapped; still there is no doubt that here as is the case in the metropolis, there is much required to be done by the Local Board of Health in compelling the owners of property to take drains into the sewer where the houses are within the legal distance from it. There is a sanitary inspector, and he is assisted by members of the Board of Health; it is, therefore, hoped that before long the drainage of cottages and other dwellings will be completed. When this is done, and a better water-supply provided, a decrease of the present death-rate may be looked for.

In some of these cottages we found excessive poverty. In one house there were a man, his wife, and five children. He was generally employed in various ways upon the neighbouring lands, but, owing to an accident, had been out of work for upwards of ten weeks. Even in the best of times, his earnings were not more than from 10s. to 11s. a-week; and here, as in other parts of this district, there were complaints that the uncertainty of obtaining constant employment materially lessens the general income. Unless something be done to this cottage in the way of repair, the roof will most likely fall upon the inmates. In another cottage a man was "awfully bad," as he said, "with rheumatics." This was not to be wondered at, for the ill-built walls and floors were saturated with damp. The houses are planted on the ground, and the flooring consists of indifferent brick-work, repaired here and there with stone. There is no opening for the purpose of ventilation at the backs. In another row of cottages of the same pattern as those just mentioned there were serious cases of fever. The well was in dangerous proximity to the filth from the houses and piggeries. Here, too, as in other parts, there is an indecent neglect of closet accommodation. We might continue at considerable length to notice dwellings of a similar description in which there were complaints of sickness, and the usual account of the death of half or more of the children. The rent of these small two-roomed cottages is from 1s. 6d. to 2s. a-week, a small sum, but which many of the poor with difficulty manage to pay.

In the central portion of Aylesbury, the Market-place, there are several very ancient houses. Some of the inns, and the old-fashioned hanging signs, are especially worth notice; and, as regards the latter, it is to be remarked that some of them deserve preservation for their artistic merits, and as examples of a style of English art which has nearly passed out of use. The sign of the Cock is well painted, and is in an excellent state of preservation. An old inhabitant remembered this sign sixty years ago. The King's Head, bluff Harry VIII., is characteristic; besides these there are the Angel, the Cross Keys, the Red Lion, the Crown, the Dun Cow, the White Hart, and other places of old note.* The last-named house, although the front has been modernized, still retains at the back the architectural features of Charles I.'s reign. The King's Head still shows many of its original points belonging to Henry VII.'s or Henry VIII.'s reign. The kitchen is very picturesque. The proportions of this apartment are large, the stained glass and leaden frame-work still remain in the window; the table, dressers, the moulded oak beams of the roof, the open fire-place, a stag's head with immense antlers, the head being of wood, painted black, the peculiar window-curtains, and other features, form a scene, which, but for the gas-pipes, the notices of railway trains, and the earthenware plates and dishes, has been little altered since the time when Shakspeare may have passed this way.

Behind the Bull's Head Inn there is a range of dwellings which requires the especial care of the local board of health of this town. Here are about thirty small dwellings, most of them in a bad state of repair, and for which there is even now only the provision of two closets. Until recently there was but one closet for the use of all the people who lived in this unwholesome situation. We need not remark further upon the evils certain to result from such a disgraceful state of things as this.

* See p. 897 for this and other illustrations of the statements here made.

* Many of these were either painted or restored by an artist named Hodgkins. He died at an advanced age not long since, and there does not seem to be any one to fill his place. The Wagon and Horses at Stone, near Aylesbury, is a good example of his skill.

Besides the neglect of closets, the drainage of houses into the main sewers, and some other matters to which we have above referred, the present water supply is an especial evil and inconvenience. The soil is of a porous description, and the numerous wells which are here and in the villages cannot fail to be more or less polluted. At the Infirmary a well has been sunk to a considerable depth, and from this a plentiful supply of water, at present very good, is raised to all parts of the building. Formerly, the prison stood in part of the market-place, and it was the duty of the inmates, by the means of a treadmill or some such contrivance, to raise water for the supply of the town. Now, the gaol having been removed, the water is carried by bearers, as it was formerly in London. The water brought from some neighbouring brook is sold at the rate of 8d. a load. The proprietor of one of the market-place inns said that he required four of these in a week, and that he was obliged to keep his stables empty in consequence of the want of sufficient water for the horses, even with the help of a well and rain-water. The cost of the water purchased by him of the bearers amounted to more than 6*l.* a year. In order to remedy this defect, it is proposed to incorporate a company to supply water for domestic, trade, sanitary, and other purposes, within the townships of Ashton Clinton, Buckland, Weston Turville, Bierton-with-Broughton, and Aylesbury, with its hamlet of Walton; and power from Parliament will be asked for next year to construct and maintain service reservoirs in a field on a high point of land near Tring, in the parish of Buckland. This plan has been favourably received, and will, it is hoped, be speedily carried out.

During six days of the week the town is quiet enough, but on the market day, Saturday, great is the change: from all the roads which centre here flock crowds to buy and others to sell. The scene in the market-place is both bustling and pleasing. The canvas-covered stalls set over the space, the crowded sheep and cattle pens, the showmen, the bellman, the dealers in tea, quack medicines, &c., &c., crowd the spot; and it may be just worth while to remark that the cost of the site of a movable stall or other selling-place in this market is not more than from 4d. to 6d., and the price of butcher's meat is,—pork, 5½d. per lb.; beef, prime parts, 8d. per lb.; loin of mutton, 7d. per lb.

We must, however, pass through this crowd into the fields, by the road towards Tame. Going in this direction, the church and town of Aylesbury appear to much advantage, and it cannot fail to strike an observer that the situation of this place is well adapted—in the centre of an agricultural district—to the utilising of the sewage of the population upon the neighbouring land, instead of sending it in waste to contaminate the streams of the Tame and the Thames. Few places are better situate for easy and effective drainage than Aylesbury. Along this road, and the others which branch from this old town in various directions, the wide extent of pasture and other land, with but few places of human habitation, produces surprise in a stranger. In this direction, for about three miles after leaving Aylesbury, there is scarcely a cottage-dwelling to be seen. The country, however, even in December weather, is beautiful. On this road is the finely-situate dwelling of Dr. Lee, of scientific note, who has collected a large and valuable museum of geological and other specimens, which have been for the most part obtained in this district. The house of the doctor has no particular architectural merits; but the surrounding parts are pleasant to the eye, and amongst the pine and other trees which fringe the road and ornament the park, a landscape painter would meet with rare studies. The wall of the park is of itself worthy of note; it is strongly built of hewn stones, won from the quarries, with ammonites and other fossils inserted here and there in the way of ornament.

Complaint comes from various quarters that Dr. Lee is careless of his cottage dwellings; that he has within a very short time demolished about twenty cottages which had been occupied by persons who were engaged in the cultivation of his land; and that the men, their wives and families, are driven to find shelter in the back-slums of Aylesbury. "It be hard," said a man, "to get to work in the season at five o'clock, and have to walk four miles, morning and night." It vexes us to note this want of wisdom. There are, however, some cottage dwellings still left on this estate, which are of the most discreditable description; and it is clear that little thought is given to sanitary requirements. Take, for instance, Hartwell, a small hamlet, situate at a little distance from the main road. Here there has been some whitewashing done; but this is only a disguise. Often, in years long since past, we have looked at picturesque homes, with the thatched roofs decked with mosses and lichens, and the walls covered with jessamines, roses, and other flowering plants; but now, although our taste for those combinations has not declined, painful experience causes us to look further. But before proceeding to give some details of Hartwell, it is worth while to note that throughout eight-tenths of the agricultural district there is no intelligent care shown for sanitary arrangements. Hartwell is a remarkable instance of this. Besides the bad construction of the houses, the drainage, if attempted at all, is so managed that, instead of carrying the poisonous refuse to a proper distance, it lodges it before some other person's door.

There is a group of cottages at Hartwell, arranged so as to form two sides of a small square; one of the other sides comprises a range of pig-styes, in parts of which are heaps of offensive matter. There is not even surface drainage here: the earth must be polluted to a great depth by what is thrown on the surface; and of course part of this must find its way into the well, which is sunk in a portion of the square. It was mentioned that a farmer not far distant would be glad to arrange for the transport of the sewage of this place to one of his fields; where, instead of being a nuisance, it would fertilize the land. On the opposite side of the road there are other cottages. Ten of these, in the rear, have been drained,—in a partial manner,—but the refuse has been brought by pipes to the front of other houses, where, in consequence of the want of proper channels, it lodges, and causes the greatest annoyance and danger.

A chief fault in nearly all the cottage-dwellings in Buckinghamshire is the smallness of the rooms. On this point we shall give some notes. It is impossible to preserve the health of families in such space. The greater number of the people who live in them are much out of doors during the day, where the air is clear and health-giving; but at night we found nine, ten, and more persons in a space of breathing-room not much larger than the united accommodation that would be provided by a coffin for each.

On the way from Aylesbury to Dinton, the Church of St. John, at Stone, a small village, is worthy of notice. About here the land is marvellously productive, and that, too, without any great amount of farming. In cuttings which have been made for quarries, the great depth of the surface soil is seen, and the favourable strata which lie below,—sand, lime, stone, and materials for brickmaking. Wood for building purposes can also be readily obtained. So here, notwithstanding the defects of the cottage dwellings, we may have, at a small cost, all the materials required for their construction, and the ground-rent of land for them should not be an obstacle. Here we met with some practical men, who seemed to understand the subject, and said that they could build roomy and convenient cottages for the reception of families, in groups of about four houses each, at a cost of 70*l.* for each cottage, which could be readily let for 2s. a week, or more,—5*l.* 4s. a year.

On this road, which, like others that lead to Aylesbury, is admirably kept, and has wooden seats at intervals for tired wayfarers on the Dinton road, is the County Lunatic Asylum; and there is also to be noted an artificial ruin, or "Folly," a singular combination of architectural incongruities, showing the fossil decoration similar to that in Dr. Lee's park. Standing as it does on a bold elevation, in the midst of tall pine-trees, the stonework now overgrown with lichens and greenery, the "Folly" looks well at a distance.

The cottage-dwellers in the country have in one respect the advantage over the inhabitants of Bethnal-green, and many other town districts, for when they leave their crowded and unhealthy homes, they may get pure breezes; not generally to be had by pent-up citizens. Still, perhaps the danger of the cottage homes, as regards fever and other pestilence, is not less than the tenemented dwellings of the industrious and poorer classes in towns, for the contrast between the outer air and that in the ill-drained and crowded cottages is greater in the country than in dense populations. The small size of the cottage rooms is, we repeat, a serious evil. In each of several of these places, which consist of two apartments, one above the other, there were lodged families, eight, nine, and more in number. The size of some of the interiors, at Gibraltar and elsewhere, is, in the lower room, 12 feet by 9 feet, and less than 6 feet in height, a cubical space of 648 feet. The height of the upper room, where in nine cases out of ten the majority of the family sleep, is barely 5 feet, which gives about 540 cubic feet of space. In the Aylesbury Infirmary there is an allowance of 1,500 cubic feet to each patient. In the Surrey County Prison, each cell contains 819 cubic feet; Knutsford House of Correction, 910 cubic feet; and the Manchester City Prison, 834¾ cubic feet. It will thus be seen that the room for a single prisoner is greater than that in the sleeping apartment of the agricultural labourers, in which it is not uncommon for nine persons to rest during the night. According to the prison allowance we ought to have for such a family a space of more than 7,000 cubic feet. We cannot wonder, then, without reference to other sanitary derangements, that fevers and other preventible illnesses should be common visitors. In Manchester it was found in certain districts, that when cholera attacked classes of houses having more than nine inhabitants in each, one case in a hundred of the population was fatal; where the number of the inhabitants was seven, it was fatal in one case in 130; where the number was six it was fatal in one case in 170; but where the number of inhabitants was not more than five, it was fatal only in one case in each 500.

While on the road we met with a cavalry officer of experience in the conveyance of horses on shipboard to the Crimea and elsewhere, who said that the great difficulty had been to supply them, when pent up together, with sufficient air: this, with considerable labour they punkered into the hold. When a storm came, however, and the captain of the vessel ordered the hatches to be closed, glanders and chest diseases broke out, and great mortality of the animals was sure to result. As with horses and with other animals, so is it with human beings, who in a polluted atmosphere will as surely perish.

The village of Dinton is in the Aylesbury Union, four miles north-west of the town of Aylesbury. The church, dedicated to St. James, is a large and venerable structure, which has been put into good repair. The south door of this church is of the Norman period, but other parts are more modern. Close by is an ancient mansion, which was formerly in the possession of Sir Simon Mayne, one of those who sat in judgment on King Charles I. It afterwards passed into the possession

of Mr. Goodall. Amongst the curiosities which have been collected here, is one of the shoes formerly worn by John Bigg, better known as the Dinton Hermit, who is supposed to have been the executioner of King Charles. He lived for many years in a cave in this parish, without even changing his clothes; mending them when necessary by placing over the decayed parts cloth or leather. By this process the shoes have become of ten times the original thickness. This mansion, which has been renovated, is a good example of a large country residence of the early part of Charles I.'s reign. Near the church there is a row of two or three dwellings, stone-built, and a story higher than most of the others in the district. In one part of the basement there is a school for girls: this is a primitive place, but the copy-books were satisfactory. There is also a small school for boys, and here and there throughout the district schools are thinly scattered. Notwithstanding, if we may partly except Aylesbury, the education of the children of the labourers, is in a very unsatisfactory condition. In the course of inquiry we found that many who have reached the years of maturity, and others of a younger age, cannot write their own names; we cannot, however, in justice say that matters are worse in this respect than they are in the eastern and some other parts of London. In a room of one of the houses in which the girls' school at Dinton is carried on, were an aged man and his wife—the latter in very bad health—who declared, and we believe truly, that they were more than half starved upon a small pittance that they received from the parish. Although there are several rooms here unoccupied,—and there is a great difficulty in getting houses in this part, especially for families,—these are kept empty by the proprietor, rather than have persons in them who perhaps might at some period become chargeable to the poor-rate of this particular parish. To this feeling much of the present evil condition of cottage dwellings is to be attributed; for instead of striving as owners ought, in justice to those on whose strong hands and strong limbs the successful cultivation of the land mainly depends, to provide houses for their workpeople, in which health and decency might be preserved, it has become the custom, especially where much land is in the possession of one proprietor, to drive the labourers to distant towns and villages, for the purpose of keeping pauperism from particular districts, and making it chargeable elsewhere. In the course of our visit to Buckinghamshire, we have had conversation with several landowners, farmers, some of the most intelligent of the workpeople, and persons who have thought much of these matters, and find there is a strong and growing opinion, that in order to effect any real amount of good, we must have an entire change in the law affecting the settlement of the poor.

We have already alluded to the demolition of the cottages on Dr. Lee's land; but matters are not so bad even there as they are in some other parts. At Creslow, the estate already referred to, which contains 1,000 acres of the best pasture land in Buckinghamshire, and perhaps in all England, there was in 1851 a population of ten, and at the present time there is but one labouring man who resides on this fine estate.

Those owners who are best disposed towards their work-people, and who would build cottages at some pecuniary loss, for their reception, are disheartened in such useful attempts by the circumstance that men and their families who are connected with other land flock to them and increase the poor-rate, while owners who make no attempt to do their duty in this way are relieved of expense; and this evil, by the present process, must, as a natural consequence, continue to increase. This is a point in the cottage-dwelling question which must, before long, be brought to the notice of the Legislature.

If the present system, which leads to overcrowding and other evils, be continued, we shall have in the health-giving country a coming population deteriorated in every way. There is more to be said as regards this—after a glance at the cottages on the estates of the Duke of Buckingham, Baron and Sir Anthony Rothschild, the Duke of Marlborough, and others,—but we will first walk through the village of Dinton, and thence to Gibraltar,—a settlement which has a most evil repute amongst the places where, owing to bad sanitary conditions, pestilence is a visitor.

ARCHITECTURE AND THE ROYAL ACADEMY.*

IN "Supplementary Evidence," in a letter to Lord Elcho, Mr. Watts thinks, like several other witnesses, the Academy should institute experiments as to the durability of colours and *media*, and ought to investigate the causes of failure in frescoes; also that it ought to make proof of the applicability of mosaic. Referring to his recommendation as to providing students with wall-space whereon to try their strength, he writes,—

"I insist upon mural painting for three reasons; first, because it is an exercise of art which demands the absolute knowledge only to be obtained by honest study, the value of which no one can doubt, whatever branch of art the student might choose to follow afterwards. Secondly, because the practice would bring out that gravity and nobility deficient in the English school, but not in the English character, and which being latent might therefore be brought out; and, thirdly, for the sake of action upon the public mind. For public improvement it is necessary that works of sterling but simple excellence should be scattered abroad as widely as possible. At present the public never see anything beautiful except in exhibition-rooms, when the novelty of sight-seeing naturally disturbs the intellectual perceptions. * * *"

He notes that few artificially produced objects about us have real beauty, though the love of beauty is inherent in the mind: "some unfortunate influence" then, he thinks, is at work, and that to counteract it should be the object of a fine-art institution. Had earnest efforts been made by the Academy during the last fifty years, he "cannot believe they would have failed to create a great school." The peculiar qualities of English character and history are almost entirely without corresponding expression in English art, and looking at what was done before the Academy existed, he "cannot see any distinct evidence of important influence to be ascribed to it."

Mr. Ruskin's evidence is marked by some contradictions, but it accords in several respects with what has been said by others, and is suggestive throughout. As to the effect of the methods of teaching in the Academy, upon the art of the country, we find the following question and answer:—

"5093. What should you say was that effect?—Nearly nugatory; exceedingly painful in this respect, that the teaching of the Academy separates, as the whole idea of the country separates, the notion of art-education from other education, and when you have made that one fundamental mistake, all others follow. You teach a young man to manage his chalk and his brush—not always that,—but having done that, you suppose you have made a painter of him; whereas to educate a painter is the same thing as to educate a clergyman or a physician—you must give him a liberal education primarily, and that must be connected with the kind of learning peculiarly fit for his profession. That error is partly owing to our excessively vulgar and excessively shallow English idea that the artist's profession is not, and cannot be, a liberal one. We respect a physician, and call him a gentleman, because he can give us a purge and clean out our stomachs; but we do not call an artist a gentleman, whom we expect to invent for us the face of Christ. When we have made that primary mistake, all other mistakes in education are trivial in comparison. The very notion of an art-academy should be, a body of teachers of the youth who are to be the guides of the nation through its senses; and that is a very important means of guiding it. We have done a good deal through dinners, but we may some day do a good deal more through pictures."

Elsewhere, Mr. Ruskin speaks of the "sort of scorn which all the teaching and education at Oxford and Cambridge, tends to give for art and artists." Mr. Tom Taylor, we may here note, doubts if the Academy has elevated the artists of this country, except socially; and whether it now exercises an influence of an ennobling or beneficial character, the education being most defective, whilst the exhibition "popularizes" art, but "does not raise it." Mr. Ruskin "would have the Academy education corresponding wholly to the university education;" the boy having begun drawing at school, should come to the central university of art, where whilst being taught to paint, and to carve and to work in metal, "the chief attention of his governors should be to make a gentleman of him in the highest sense; and to give him an exceedingly broad and liberal education, which should enable him not only to work nobly, but to conceive nobly." Mr. Armitage had just before expressed opinion against a test of general education, in addition to the other, for the admission of students, saying there would be risk of excluding very able artists, and instancing that Claude de Lorraine could hardly write his own name.

Although in the portions of the proceedings of the Commission which we have quoted from, painting is the art chiefly referred to, it is easy to deduce from the arguments some which may elucidate the question of education in architecture. Not only good drawing-master's drawing, but the drawing of plans, elevations, and sections, and descriptive geometry, should be taught in ordinary schools. Every person should understand something of the language of geometrical drawings, though not using it in the manner of a professional architect. The notion of excluding a Claude in one art, must not prevent our setting forth that a certain preparatory education in languages and science, is necessary to the formation of the highest rank of the profession of architecture. Having brought the youth to the age,—or better perhaps, something over the age,—at which he now generally enters an architect's office, the question is, (but which we do not propose to discuss here at length,) is the office, or some institute or academy, to be mainly looked to for the formation of the future architect. Already, with the facilities afforded at the London University or King's College, and by the classes at South Kensington, not to mention the arrangements of some classes in the Architectural Association, a good commencement may be made on the programme of the Institute of British Architects, itself a valuable thing as showing the requirements of the education. At some period or other, however, the student must place himself where he can learn the business of an architect, if not also, and to the end that he may possess certain abilities that will serve him as an architect and artist, where he can learn the qualifications of measuring surveyors. We should not regret to see his serviceableness, rather than his ability to pay a premium, made the inducement to the commencement of the connexion of master and pupil; a relationship which also we could desire to see more intimate, and longer subsisting, than it generally is. If the *atelier* system, and the combination of the labour of master and pupil, be desirable for the pupil, and necessary to the production of great works in painting, as even Mr. Ruskin admits, this is exactly the system which we would desire to see in operation for architecture. The present system of articled-clerkship fills the profession; but it is questionable how far it produces architects with the qualifications which the public and the art demand, or how far the supply is not forced beyond what would be created by the demand of the number of buildings to be erected. The class of pictures which are produced by young painters, and are sold in the exhibitions,—so that the artists do not care to assist other men in larger works,—are, at least very many of them, works of legitimate art, and going to serve some object in their ultimate location; though the art may not be the highest, or the object one in which the public are concerned. But are not architects' competitions worse? The natural demand from buildings to be erected, and requiring in the opinion of their managers, professional supervision, and the demand for drawings, bear no relation to one another: an army of men is called into existence who never can find remunerative labour,—because out of a hundred staffs of pupils competing, only one office can have the execution of the building; and designs made to programmes and "instructions," or designs hurriedly executed, are produced rather than duly studied works. It would be well to consider whether a system which not only induces young men to look to the profession, and architects to take them as pupils, in greater numbers than the actual demand for architecture justifies, but which induces a severance of the connexion of master and pupil at first moment that the young architect thinks himself justified in writing up his name, is the best for the interests of any kind. We have always thought that the system which prevails in the civil engineer's profession, might with great advantage to art and to young architects, be followed in our branch of the profession. This system, of a staff of engineers,—engineer in chief, assistant and resident engineers,—is precisely the system upon which the great work in the École des Beaux Arts was produced by Delaroche and by Mr. Armitage and his friends, and the system on which the *loggie* of the Vatican were decorated by Raffaelle, and his assistants,

* See pp. 804 and 854.

great artists whose names are known. Mr. Ruskin, after saying that "in all mighty work" "every touch and hue" has "been put on lovingly by the painter's own hand, not leaving to a pupil so much as to paint a pebble under a horse's foot," is compelled to admit that "when a thing was to be done in a certain time it could only be done by bringing in aid," the aid of pupils who "were nearly as mighty as the masters," but who were "so modest and simple, that they were repeatedly sacrificing themselves to the interests of their religion or of the society they were working for;" and that "assuredly" pupils should be so trained as to be capable of assisting masters in great works. Unfortunately, now, for the prevalence of such a system in our profession, not a clerk of works or pupil can be entrusted with the least contrivance, or builder asked his opinion, but the delegation or demand is set down to the score of inability or ignorance in the principal; so, the evil of first deviating from the right course,—that of allowing fair credit for each subordinate duty, and accepting none but what is due,—tends to be infinitely reproduced.

There is a question closely connected with this one, which received much attention from the Commission, namely, that of adding what is termed a lay element to the Academy. The architect cannot help having as his judges, those who are his employers. Great variety of opinion prevailed on the question before the Commission. As the Report says, many members of the Academy, with Sir Charles Eastlake, stated strong objections to associating non-artists with artists in deciding any question of art. The evidence of Dr. Storrar, one of the Council established pursuant to "the Medical Practitioners' Act," showed that the element originally intended in this council had not been introduced, but gave some noteworthy arguments in its favour. Dr. Storrar said:—

"I could perfectly understand any one, myself, for instance, a professional man, taking up a principle that might seem to be a very obvious one to a professional mind; but having to explain it from the beginning to the satisfaction of a non-professional mind, I might discover, in the very process of explanation, that the principle would not hold water, and give it up myself."

Evidence was given by others as to a lay element in the Institute of British Architects. We only say, that not only are buildings erected for the service of the public, but art-architectural must be designed for the same constituency. On the educational question, Dr. Storrar replied pertinently to the issue, as where he said:—

"I cannot help thinking that it would be a desirable thing if the Academy could secure some such test of mental culture as has been recognized by the heads of other professions. . . . . Leonardo da Vinci was not a worse painter because he had a very cultivated mind; and if we had more painters of cultivated minds we might, perhaps, have a better chance of having more Leonardos."

We have made no effort to discover and explain by what precise arrangement between the representative body of architects and the Academy, a proper system of architectural education could be instituted. But we cannot conclude this notice,—lengthy for our space, but inadequate for the treatment of many of the subjects discussed in the Commission,—without some further reference to the views of one witness in particular. Mr. Fergusson's impression is that it would be better that the connexion between the Academy and architecture were dissolved, and the whole strength of architecture "thrown into the institution specially devoted to that branch of art;" and he gives his view of the distinction between painting and sculpture on the one hand, and architecture on the other. Mr. Fergusson holds (answer to Lord Hardinge, question 3454), that architecture has no connexion with his *phonetic* arts, painting and sculpture, and that it is "a mere constructive art treated ornamentally, in the same way as you would treat pottery, jewellery [why he classes jewellery with architecture, rather than with sculpture, we cannot see], furniture and embroidery," all those arts being "capable of being made fine arts as well as architecture," but "none of those arts" having "any connexion with painting and sculpture, which are the embodiment of ideas that can be represented in words." Asked (3455) as to a connexion between painting and architecture, as in the decoration of an interior, he replies,—

"You may ornament your building either by paintings hung in frames, or paintings put upon the wall, or by ornamentation upon the ceiling and mouldings; but all those appear to me to be secondary parts, and not essential parts of architecture at all."

We cannot accord that those things that are not moveable, do not belong to our art. Surely ornamentation upon mouldings is part of architecture.

Mr. Fergusson demurs to the opinion that there are certain laws, as of proportion and variety, governing both painting and architecture, or does "not perceive them;" though we agree with him as to errors having been made by the painter-architects Michelangelo and others, and as to the distinction between the architect's works which are merely *represented* by drawings, and works as those of the painter, which can be exhibited in themselves. If "the whole influence of the architectural profession" cannot be "thrown into the Institute," and that body be not made what he hopes for, he admits it "would be very unwise of the architectural profession to throw away any shade of influence which they may obtain through the Academy." But after widening the basis of the Academy and introducing the non-professional element, he still thinks "that the architects are so different in their professional studies and in their professional pursuits from painters and sculptors, that they ought to be independent of them." He is however right in saying that "architectural education can only be properly given by men who are devoted to the profession," &c. The Report of 1856 (Appendix No. 20) by two architect-academicians of the time, appears to have been the result of the same view in the Academy itself. In questions 3492 to 3499 inclusive, Mr. Fergusson was pressed hard on the point of a natural federation in fine art, but he would not even admit a connexion between "sculpture properly so called and architecture." He said:—

"There is a class of sculpture which you may call decorative sculpture, which belongs to architecture, but which is certainly not sculpture of the high class of art which we generally understand by sculpture, namely, ideal sculpture."

He may be correct as to fact, where afterwards not thinking that any sculptor of the first class is employed in certain works of a decorative character that were referred to; but we apprehend that the sculptors are mistaken in not giving attention to works of the kind. The truth cannot be got rid of, that groups in pediments, relievoes, and even combinations of animals and foliage, are sculpture; and if the professors of high art sculpture hold themselves aloof from architectural decoration, they simply continue the blunder they have lately made to their own detriment, and to the shortcoming of architecture, general art, and "public monuments." But Mr. Fergusson thinks the two arts were dissociated in the Greek temples. Questioned as to the Elgin marbles, he replies, to our great surprise,—"They were not parts of the architecture, they were added to the architecture." Pressed with the question (3497) whether they were not "part and parcel of the building, and one of the most important features in it," he replies:—

"They were, but they are quite as good without the architecture, and quite as admirable. They were done by a different class of men, and with a different aim entirely."

Forgetting, as it seems to us, that the point of the question was, whether the *architecture* would have been "as admirable" without the sculpture, which surely Mr. Fergusson would say it would not have been. He thinks, however, that the arts were as separate,—that "the architect provided a place for the sculpture, but the sculptor had the whole control of what belonged to his art."

The intimate association of architecture and sculpture concerns the effect of our "public statues" and memorials, and our buildings. The arguments for it were alluded to in our last article; and we have frequently given them when treating the subject of public memorials. Mr. Tite, in his evidence (2596), spoke of the defects of pedestals resulting from this want of association, and of the better results in France from the system there.

We must repeat the expression of our surprise and dissatisfaction, that, after the receipt of much evidence on the subject of the position of architecture in the Academy, and whilst reporting the defects of our public works, the Commission should have left unnoticed the amendment of the system, through attention to the present claims of architects, and the training of architects in the future.

THE ROYAL ACADEMY MEDALS.

On Thursday, the 10th inst., being the ninety-fifth anniversary of the foundation of the Royal Academy, a general assembly of the Academicians was held for the biennial distribution of premiums, the president, Sir Charles Lock Eastlake, in the chair. Speaking first of architecture,—

A Travelling Studentship for one year, with an allowance of 100*l.*, was awarded to Thomas Henry Watson, "for the best design in architecture."

The subject was a town hall, style Gothic, more foreign than English: an excellent set of drawings.

The gold medal, books, and a scholarship of 25*l.* for two years, were awarded to Richard Phené Spiers, "for the best architectural design." Mr. Spiers also received the silver medal and books, for the best figured drawing of St. Stephen's, Walbrook. The subject of the original design was a Vestibule and Staircase to a Royal Palace. The plan was well studied, the design good, and the whole was set forth in some excellent drawings.

The following premiums were also awarded:—

The Gold Medal, Books, and a Scholarship of 25*l.* for two years, to Francis Holl, for the best historical painting; and to Henry Bursill, for the best historical group in sculpture.

The Turner Gold Medal to Frank Walton, for the best English landscape.

Silver Medals and Books were likewise awarded to Arthur Ackland Hunt, for the best painting from the life; to George Smith, for a copy made in the school of painting; to Arthur Ackland Hunt, for the best drawing from the life; to Francis Holl for the next best drawing from the life; to Edward Evans, for the next best drawing from the life; to John Barclay Grahame, for the best drawing from the antique; to Augustus E. Mulready, for the next best drawing from the antique; to Charles B. Barber, for the next best drawing from the antique; to Samuel B. Long, for the best model from the antique; and to Frederick S. Potter, for the next best model from the antique.

The president in his address said that the architectural drawings and the drawings from the antique were marked by an unusual degree of excellence on the present occasion. We fully agree with him.

FAILURE OF THE FLOOR OF THE NEW MARKET HALL, DARLINGTON.

Last week, this new hall, which has been in course of erection for the past two years, under the superintendence of Mr. Waterhouse, architect, was opened for the purpose of holding the annual fat cattle show. On Thursday, soon after the commencement of "shilling time," a portion of the floor suddenly gave way, and nine or ten men, together with three of the enormous prize animals, were precipitated into the basement, a depth of about 12 feet. Although, wonderful to relate, the animals were uninjured, such was not the case, we regret to say, with the spectators, one of whom was so much injured that he died on Saturday last, and others at that time were lying in a precarious state.

According to the evidence given at the inquest, held on Monday, it appears that the space which gave way was a compartment of the floor, 20 feet by 15 feet. A cast-iron girder ran lengthwise of this space, carrying the haunches of two arches, 20 feet by 7 feet 6 inches each. The girder at the middle was of the reversed ⊥ section, 15 inches in height and 1 inch thick; the bottom flange 9 inches wide, 1¼ inch thick, and the top 4¼ inches wide, calculated, by the average of witnesses, to bear in the middle about eighteen tons stationary load if of the best iron, and if a perfect casting having proper hold at the ends. It appears, however, that it was *not* of good iron, had a piece of ash in the lower flange, and had only 3 *inches* hold at each end, which circumstances, in the opinion of the professional witnesses, reduced its strength by about a third—or to about twelve tons breaking weight of stationary load in the middle, though of movable load the witnesses variously estimated the amount it ought to have been tried with at from four to six tons in the middle.

The weight upon the girder at the time it broke was about fifteen tons equally distributed, about five tons being movable load transferring its momentum to the dead weight of arches, &c.; and with this weight it broke.

The most remarkable and culpable circumstance appears to us to be that, although the girders were cast within a quarter of a mile from the building, and for about two years there has been a clerk of works engaged to constantly inspect the works, *not one of the girders was tested*, although cast iron is proverbially an uncertain material, and in this case, as in most, the lives of hundreds depended on its sufficiency. It was stated at the inquest that the rest of the floor will have to be strengthened by the introduction of intermediate pillars.

The jury found that Mr. Robson was killed by the giving way of the floor, and expressed their opinion that the girder was not strong enough for the weight put upon it.

Hexham.—It is proposed to erect a new corn market and townhall here.

THE VALUE OF METROPOLITAN SEWAGE.

SIR,—I see by the resolutions passed, and the speeches made, at several recent meetings of metropolitan ratepayers, that "the analysis of the metropolitan sewage made by Messrs. Hofmann and Witt," and Mr. Ellis's interpretation of the estimate of these gentlemen, are adopted as a basis of the expectations entertained of the great pecuniary benefit to accrue to the ratepayers from the utilization of the sewage. Mr. Ellis maintains, that the estimate of Messrs. Hofmann and Witt, of a little over 2d. per ton for the manurial value of the constituents in the metropolitan sewage, refers to the average of the normal sewage and the rainfall taken together. Accordingly, he takes 266,000,000 tons, the estimated annual amount, with rainfall, at 2d. per ton; and on the assumption of this rate of value, he holds out the pleasing assurance to the ratepayers, that their moiety of the profit arising from the adoption of his scheme of utilization would be "an annual sum of not less than 700,000*l.*" I, on the contrary, have repeatedly maintained, that it is perfectly clear, from the Report of the Main Drainage referees, embodying that of Messrs. Hofmann and Witt, that their estimate of 17s. 7d. per 100 tons, or a little over 2d. per ton, refers to the normal sewage without rainfall; and, accordingly, in calculating the total annual value, they took into account only the amount of sewage, exclusive of rainfall, which may be stated, in round numbers, as averaging only about three-fifths of the total quantity inclusive of rainfall. I further maintain that, especially under the then existing conditions, it would have been absurd in the extreme to attempt to determine the average composition of the sewage by the analysis of samples of the essentially variable diluted sewage inclusive of rainfall, unless, indeed, of specimens taken almost the year round. But all my appeals to the public document itself have been met by Mr. Ellis, and some of the advocates of his scheme, by contradiction, by irrelevant quotations from it, by pretty direct accusation of falsehood, and by most unscrupulous and entirely unfounded imputations of unworthy and interested motive on my part in making the statements which it is alleged are untrue. I have thought it only due, therefore, both to the ratepayers, who are so much interested in the matter, and to myself, whose veracity and motive have been publicly called in question, to request statements for publication from the authors of the report. The following are copies of the letters which have been kindly furnished to me by Professor Hofmann, the surviving analyst, and by Captain Douglas Galton, and Mr. James Simpson, C.E., the surviving Main Drainage referees.

"On referring to the report made by the late Mr. H. M. Witt and myself to the Main Drainage referees in 1857, I find you are perfectly correct in stating that our estimate of 17s. 7d. for the manurial value of the constituents in 100 tons of the metropolitan sewage (equal to a little over 2d. per ton), is founded upon the analysis of samples of mean sewage taken from the Savoy-street sewer.

I also find that the amount of sewage which the samples in question were supposed to represent was, according to the information furnished to us by the referees, taken at 95,000,000 gallons per day, and their report (p. 14) shows that this was the estimated amount of the dry weather sewage.

Reckoning the total amount of the normal dry weather sewage, in accordance with the above information supplied by the referees, at 95,000,000 gallons per day, or 157,625,250 tons per annum, we arrived at 1,385,540*l.*, as the total annual value of the constituents of the metropolitan sewage. A. W. HOFMANN.

Dr. Gilbert, F.R.S., F.C.S."

"With reference to the question contained in your letter of 18th ult., we beg to state that the sample of sewage taken under our direction for analysis by Messrs. Hofmann and Witt, for the purposes of our report on the main drainage of the metropolis, were mean samples of *dry weather* sewage, taken from the Savoy-street sewer in the manner described in the report; and from the analysis of these samples, Messrs. Hofmann and Witt estimated the value of the constituents in the metropolitan sewage at 17s. 7d. per 100 tons, or about 2d. per ton. Their estimate refers, therefore, to normal sewage *without rainfall*.

DOUGLAS GALTON.
Dr. J. H. Gilbert." JAMES SIMPSON.

There is no doubt whatever, therefore, that Mr. Ellis has estimated the total sewage with rainfall, at the value per ton fixed by Messrs. Hofmann and Witt for the sewage without rainfall, and that he has thus, so far as the value is determinable on such data, overstated it by somewhat more than the amount which he informs the ratepayers will be placed at the disposal of the Board of Works for the reduction of local taxation over the metropolitan area provided his proposition for the utilization of the metropolitan sewage be accepted. J. H. GILBERT.

ACOUSTIC POTTERY.

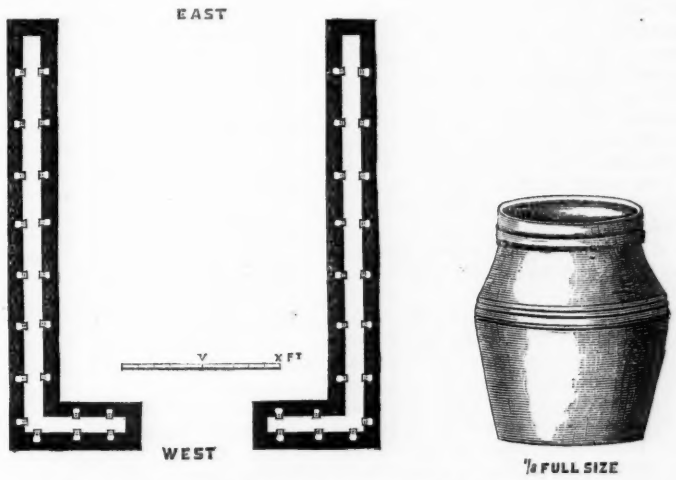
As this subject is again exciting considerable interest, it would be as well to publish more generally than has yet been done the following curious discoveries, made in two of the churches in Norwich during the past few years.

In the year 1850, the floor of the chancel of St. Peter's Mancroft was removed, and immediately below it was found a drain about 1 foot wide and 18 inches deep, formed with rubble walls about a foot thick, and a concrete bottom, the inside being plastered over with a kind of rough-cast. This drain ran under the stalls, north and south, and returned at the west end of the chancel, inside where the screen formerly stood, stopping short at each side of the doorway (see plan); in fact, following exactly the usual arrangement of the choir seats. In both sides of these walls were built, about 3 feet apart from centre to centre, red earthen jars, with their mouths slightly projecting into the drain. These jars were 8 inches wide in the largest part, and 9½ inches high: at the mouth they measured 6 inches. They were perfectly clean and free from deposit, and inside were slightly glazed. They varied a little in shape; but the accompanying sketch from one still in the possession of Mr. Fitch, F.S.A., shows pretty nearly their general form.

In 1860 a precisely similar discovery was made in the chancel of St. Peter's Mountergate, in the same city; the only difference being, that here the jars had handles, and they were not opposite to each other, but alternated each side. The size of one of them in my possession is 9 inches high, and 7 inches in the widest part. Some of these were also partially glazed inside.

St. Peter's Mountergate being a much smaller church than St. Peter's Mancroft, the drain was not of the same extent, nor the number of jars so many; but otherwise the plan of the drain was exactly like that at St. Peter's—namely, running north and south, and returning with a short end to the west. In both churches the covering to the drain is only the old wood floor and joist. After careful personal observation, I have no doubt whatever but that these arrangements were intended to conduce to the chanting resounding more strongly; but whether it accomplished this or not is another matter. It would be exceedingly interesting to know if any similar discoveries, except those at Fountains Abbey, have been made in England. Perhaps some of your readers can give an account of like arrangements being found in other churches; and if so, I hope they will communicate to you the particulars.

MAKILWAINE PHIPSON.



Plan of Drain containing Jars, Church of St. Peter Mancroft.

THE SCIENCE OF SANITATION.

SANITARY science is simple in its requirements, but is complex in its combinations. Fresh air, pure water, wholesome food, and cleanliness are requisite to comfort and to health. But, when man is situate in crowded cities and towns, he is placed under conditions so numerous and so various that it becomes impossible briefly even to catalogue them.

Fresh air is said to be necessary to health. But how is "*fresh air*" to be secured in the midst of hundreds of thousands of coal-fire chimneys? Where is "*fresh air*" to be breathed in the midst of London November fogs? The reply must be,—"*Fresh air*" cannot be wholly secured to the inhabitants of great towns; that is, an atmosphere absolutely free from the gases of combustion and the gases of decomposition cannot be secured; but there are such things as a maximum of evils, and a minimum of evils. We may see a maximum of sanitary evils in a large town, like Liverpool, in past times, with its 50,000 poor persons existing in cellar dwellings, having the ceilings at or below the level of the adjoining street or ground surface;—or, like Liverpool at the present time, with its 3,173 close courts, containing 18,610 houses, and about 112,000 inhabitants; most of these places having common privies and cesspits crowded in the midst of the population. Of what avail are the hundreds of miles of sewers and drains, if liquid soil-refuse taints the subsoil below, and the atmosphere around; and if fresh air and sunshine are alike permanently excluded? Manchester and Liverpool have expended vast sums of money to bring in water, pure in quality and abundant in quantity; but we look in vain for any corresponding decrease in the local rates of sickness and mortality. We learn one practical lesson from this result, namely, that when it is asserted that to give a town an abundant supply of pure water will necessarily repress the local mortality, actual experience does not warrant the assertion. Some years ago Keswick and Whitehaven were each supplied with water in abundance, and in quality of almost absolute purity;—Keswick from springs on the clay slate shale of Skiddaw, and Whitehaven from the granites and clay slates bounding Lake Ennerdale. During the spring, summer, and autumn just passed and passing, these towns, so supplied with pure water, have suffered most severely from small-pox and from fever. In both towns the local authorities had, however, obstinately refused to sewer and drain; so that, in many cases, water became a curse rather than a blessing.

Sewers and drains are necessary to preserve the purity of the subsoil below, and the atmosphere around, dwelling-houses in towns. But a town may be sewered and drained to very little purpose,—nay, to a mischievous purpose,—if other sanitary arrangements are neglected; or, if the work is imperfect in design and bad in execution. Sewers and drains ought to transmit, at once, and continuously, all fluid and soil refuse passed into them. If, however, the fluid filters into the subsoil, and the solids deposit, accumulate, and ferment to corruption in the drains and sewers, and houses have direct communication with such drains and sewers, we need not wonder that, as Professor Christison asserted at Edinburgh recently, "There are fevers which sewers and drains do not prevent."* Before, however, we pronounce judgment against sewers and drains, all the facts should be known: as to their sectional form; as to their materials; as to their mode of connexion with houses; as to their ventilation; and as to their use and abuse. But sewers and drains, however

* Should he not have said,—"There are sewers and drains which do not prevent fevers?"

perfect, will not alone remove all causes of local sickness and excessive mortality. Waterclosets are means of great comfort and convenience in houses, when fixed in proper places, fully ventilated, and properly used. But, as fixed, and as used in many buildings, public and private, they only constitute a filthy nuisance. This is the case in some of the largest hotels in Scotland, where waterclosets have been placed on inner corridors, and against the inner walls of rooms, without light, other than artificial, and with no means of ventilation but into and through the interior atmosphere of the house.

Paris offers an example, on a grand and most costly scale, of blundering in sanitary science. In former times the city of Paris was, like many English towns to this day, a city of open cesspits, crowded in amongst dwelling-houses. About the year 1819, in an evil hour for the health of Paris, a municipal ordinance was passed, giving the civic authorities power to compel the abolition of open cesspits, and enforcing the construction of covered cesspools "hermetically sealed." An open cesspit is an abomination in a state of unceasing amelioration. The rain washes the filth and dilutes it, and the air and sunshine evaporate it; but a covered "hermetically sealed" cesspool is an unceasing generator of deadly gases of putrid fermentation, which gases traverse the pipes of house communication, and pervade, like a subtle scent, the whole dwelling and its precincts. Who has not recognized, in the gilded saloons and costly-furnished rooms of a Parisian hotel that subtle stench which open windows and open doors do not remove? It is unseen, but palpable, almost to taste. This is the emanation from the underground and "hermetically sealed" Parisian cesspool. Paris may present all the external grandeur which architecture can accomplish; may be, as she is, "a city of palaces;" and may have that scrupulous cleanliness on the surface which we see; but so long as she remains a city of "hermetically-sealed cesspools" she will only resemble a whited sepulchre, fair without but rotten within; or be like that fruit, so beautiful to look upon, but so worthless because ashes to the taste at the core.

London was a city of cesspits and covered cesspools, or "*dumb-wells;*" but, fortunately for London, no imperial power ever "ordered" and "established" covered and "*hermetically sealed*" cesspools. Our municipal and local Dogberrys blundered into making street sewers, to remove surface-water from the channels, Swift's city showers, and nuisances of a similar character, by the valley lines to the river. At first, the drainage of waterclosets direct into the public sewers was prohibited; but the overflow from dumb-wells,—"*cesspools*"—was allowed, and then gradually, with the connivance of Dogberry, and, no doubt, in many cases, to accommodate his customers and friends, the rule to exclude waterclosets from public sewers was relaxed, and in time a new rule, admitting such uses, was established. We have sometimes wondered if Shakspeare intended to show, that with municipal freedom and municipal institutions, even ignorant and blundering clowns, like Dogberry, Verges, and the Watch, representing or caricaturing local self-government, could, in their own roundabout way, serve the purposes and ends of justice, as well, if not better, than a secret police under despotic rule. Nothing could be more complete than the results arising out of the action of Dogberry and his fellows. The offenders are brought to justice, vice is exposed, and innocence is made apparent and is established triumphantly. We are constrained to say, whilst laughing at the clown, "Well done, Dogberry."

London is at present undergoing a most costly experiment: vast "intercepting" sewers are being formed, at an expenditure of money amounting to millions sterling. Will these sewers improve the health of London or not? This is a question of the utmost importance to the ratepayers who will have to pay the cost. We have explained that a good supply of pure water to a town does not necessarily diminish the local rate of mortality; and we have also attempted to explain that sewers and drains may work mischief rather than good, if they are improperly constructed, badly or defectively ventilated, and retain the refuse passed in, so as to set up putridity and fermentation. The great intercepting sewers of London, if they only remove surplus water, may prove a curse rather than a blessing; as, at present, any excess of rain-fall in London produces surface mud; this surface mud is partially liquified and is washed down the street gullies and drains into the miles of sewers containing foul deposit; and so the surplus water and mud dilute, and, in a measure, disinfect the material deposited in the scores of miles of imperfect London sewers. By removing this water and mud from these secondary sewers, and so allowing putridity and fermentation to remain active, such districts as Chelsea, Belgravia, Eaton-square, Pimlico, Buckingham Palace, Westminster, Lambeth, and Bermondsey, may be injured rather than benefited. A grand work is not necessarily an improvement. The re-building of Paris adds to its external and visible magnificence, but leaves the festering sanitary cesspool sore scarcely touched. The grand intercepting sewers of the British metropolis will remove a volume of surplus water and mud, but will not necessarily benefit the sewerage of the metropolis at large. To complete the sewerage improvement of the metropolis, all the flat sewer inverts require to be re-constructed on the egg-shaped principle; all the sewers in ruins require to be re-constructed, and the thousands of street ventilators which now pass sewage gases direct from the sewer beneath to the atmosphere in the street above, should have side chambers and charcoal filters. The destiny of a nation is not settled by single actions, however grand. The reputation of a great man does not rest on one nor on two incidents in his life. There are the thousand and one minutiæ necessary to make up true greatness. The details, however numerous, must be in accord with the whole, before there can be true utility. There must be "*breadth*," "*harmony*," "*keeping*," to constitute true greatness. There must be "the power to rend the oak and to pick up the pin."

Sanitary science, as we have previously said, is simple, and is also most complex. The requirements are simple. Human arrangements are necessarily complex. There will never be complete, safe, and efficient self-acting arrangements and sanitary apparatus. Much must depend on human intelligence, and there must ever be unceasing care. A chronometer is the most perfect form of mechanism ever invented and manufactured, or "made," for marking time. We must not, however, trust the keeping and management of a chronometer to an uneducated boor. Sanitary works require knowledge to devise them, practical skill to execute them, and manipulative practical dexterity to work them.

Land drainage seems a very simple thing; but is, in reality, a complex and exact science. Water has to be permanently removed from the subsoil, and atmospheric air ought to be let in to the roots of the plants. The water may be removed in most cases: air is, however, admitted in very few cases indeed.

Town sewerage and house drainage also seem simple operations to some members of town councils and to members of local boards of health. But town sewerage and house drainage are necessarily complex operations. Sewers must be devised with knowledge, and must be executed with educated skill and care.

The drainage of houses has been, for the most part, executed at random; and even in London, to this day, with all the apparatus of the Metropolitan Local Management Act, and Metropolitan Board of Works at Spring-gardens, the duty of inspecting the proper construction of house-drains is left to builders and to chance. That is, notices must be given and sanctions must be obtained to break into a main sewer and to execute a junction with a house-drain; but it is not the duty of any metropolitan public officer to examine and see that such junction is properly made, and to certify the same to the legally constituted local authorities. Mr. Haywood most probably performs this duty for the City; but it has not been performed for the vast numbers of new houses recently erected at the west end of London. The surveyors to local boards of health in the country have this duty to attend to, and there is no reason why some person should not perform a similar duty for the several divisions of the metropolis.

With regard to sanitary science in house construction we moderns have made little progress. In some respects we have "advanced backwards." That is, the perfection of workmanship and of materials in modern houses is an evil. Flooring-boards are stove-dried, close jointed, and laid double; skirtings are of cement; door-casings, window-casings, and doors and windows are "the perfection of workmanship." The entire house, from basement to roof, is sound and air-tight in walls, in floors, in doors and windows, and in roof; but, and herein consists the evil, arrangements for ventilation there are none. The openings from the grates to the flues are low; the ceilings are high; but means for a never ceasing change of the internal atmosphere there are none. We have the most costly material and the perfection of workmanship spoiled in our house building, because we make no provision for permanent ventilation. Better, far, for health, the old houses of our great-grandfathers, with a chimney so wide that the family coach might have been hoisted up it; with a fire on the hearth so big that an ox might have been roasted at it; and with chinks, with cracks, and with openings, in floor, in walls, in doors, in windows, and in roofs, letting in streams of fresh air sufficient to drive a small windmill. Our great-grandfathers may have shortened their lives by gluttony and strong ale: they may have suffered from rheumatism; but they did not die prematurely of close rooms and foul air. Then consider our modern way of life, during "a season," "evenings at home, small and early," but crowded to excess. Then an ordinary ball or reception is something certainly to witness, to think over, to wonder at, and, after one dose, to avoid in future. We construct rooms, imperfect in ventilation, for five jets of light and a dozen people. But we light fifty jets, and cram in a hundred and fifty people, and then wonder at our own discomfort, at our friends' head-aches, and at the vast proportion of consumption amongst young people. A dinner-party in a modern dwelling-house is just as unsanitary, and in crowding nearly as bad. Houses ought to have special arrangements for ventilation to meet modern requirements of large parties: every door space should be made to open, on such occasions, up to the ceiling; and there should be means for full and free ventilation in corridors and staircases. But *crowded* parties are a barbarism, and ought to be avoided.

With respect to ventilation, who shall decide this question? Whose plan or whose patent shall be adopted? These questions are more easily asked than answered. Complex systems of ventilation do not answer for private houses. A certain fixed means by which there may be unceasing change in every room will be the best; and the more such means are confined to narrow, slit-like openings the better; a pure air-chamber behind a skirting, with a fine slit opening all round the room. An abstracting air-chamber behind the inner cornice, with a thin slit opening all round, leading to an ascending flue, will change the largest volume of air over the greatest sectional area, with the least perceptible draught. Square openings, such as Arnot's valves give, do a minimum of good, as they establish a current to the point of opening without necessarily changing the whole body of air in a room. Care must be taken not to draw in foul air through sinks, closets, and bath wash-out pipes, by leaving the pipes untrapped, and the plug out.

Sanitary science will not teach us to construct such enduring temples as we find remnants of in the ruins of Thebes, nor to rival the ancient Greek in Athenian purity of architecture, nor the Roman in the vastness and majestic grandeur of the Coliseum: but it will teach us how to provide, devise, construct, and regulate houses for the people in which there shall be so much of atmospheric purity as is necessary to health, and a chance to every individual born into the nation for an observance of Christian morality. We need not aspire to a restoration of Mediæval charity and monastic institution; that alone is true charity which enables a whole people to live and to die without almsgiving. Antiquaries and architects may mourn over the by-gone days of cathedrals; and the followers of Dr. Pusey may yearn after the "dim religious light," and sigh for "the fretted aisles," for the "sublime music" and the "imposing ceremonial," shrouded in all the pomp, in all the splendour, in all the colour, and in all the spirituality of sweet sounds. But that is not the religion of Christ which clothes its officiating priests in robes of scarlet and gold, and surrounds the gates and doors of its temples with wretched, squalid, human bodies, blind, maimed, scrofulous, and impotent from their birth by reason of contagious and festering disease ever present in their miserable dens of homes. The worshippers in the pure Christian faith will not necessarily go to that city, nor to this temple, but, in their own homes, will worship God in spirit and in truth. When sanitary science leads to these things, men will have learned a great secret, which will consist in those who govern securing the greatest amount of physical comfort and moral purity to the whole people.

THE PRINCE CONSORT MEMORIAL.—Mr. Scott's model of the memorial which is intended to be erected in Hyde Park to the memory of the late Prince Consort, has been submitted to her Majesty, at Windsor Castle. It is erected on a stand fitted for the purpose in the grand reception-room.

THE POOR IN BETHNAL GREEN.

SISTER SOPHIA LOIS, in charge of the Soup Kitchen, 1, Thomas-street, Brick-lane, says:—"I feel sure if the benevolent and wealthy witnessed the sad scenes which I daily meet with in my visits to the sick poor, they would cheerfully give their mite, remembering that 'he who giveth to the poor lendeth to the Lord.'" Our readers know the intense distress which exists in this district: this will be increased as the winter advances. The soup kitchen and other provisions will be sorely wanted; but it seems to us, and we have thought with much care on the subject, that in order to render effective service, some better plan of organization than that at present in use is required. We feel certain that if it were known that there is an influential committee, composed of a number of leading people of the district, clergymen and others, a considerable sum would be forthcoming for the supply of soup, coals, and other necessaries. We have already said so much in connexion with this matter, that we will not do more than again urge those who have local influence to lose no time in making the commencement of a relief fund, which may be the beginning of a means of aid proportionate to the extent of the necessity.

The Poor-Law Board have, through the Board of Guardians of Bethnal Green, passed a severe censure upon Mr. Christy, one of the relieving officers in connexion with the case of the late Caroline James. The Poor-Law Board, after some general mention of the particulars connected with this unfortunate death, say, "That it was evident that Mr. Christy had used coarse and improper language towards Caroline Palmer, one of the neighbours in attendance on the deceased, as he was leaving the house; and the Board have reason to believe that his conduct in other respects was not so temperate and forbearing as it ought to have been. The Board, however, are unable to arrive at the conclusion that the death of Caroline James was accelerated in any sensible degree by the course pursued by the relieving officer; and having regard for the fact that she was afterwards taken and maintained by her mother, and that her funeral expenses were afterwards paid by her brother and sister, they think that the circumstances of the case are not such as to require so extreme a step as that of requiring his resignation, especially when they take into consideration the length of Mr. Christy's services, and the deliberate opinion expressed by the guardians that in this instance there is great extenuation of his conduct." He may think himself let off easily.

THE PRESENT STATE OF THE LANCASHIRE DISTRICT.

THE position of affairs throughout Lancashire still presents a dreary aspect, and it is feared that to many the coming winter will be a time of much suffering. On this matter, Mr. Farnall reports that on the 5th instant there was a small increase of 228 in the twenty-seven unions in the cotton manufacturing districts, as compared with the number so relieved in the previous week. We do not think, however, that this increase is to be altogether attributed to cotton failure, for at this season of the year there are large numbers of persons connected with agriculture, building, &c., who fall out of work. If the weather should set in severe, there will be a large increase of pauperism, in both town and country, which will be in no way connected with the cotton trade.

In the above unions, since the 6th of December, 1862, there has been a total decrease in the number of persons receiving parochial relief of 143,050. Large as this reduction is, there were on the 5th instant 128,933 persons in those unions who were still depending on parochial relief. In the corresponding week of the year 1861, the number of persons who depended on aid from the parishes was 57,535; so that we have by comparison still an excess of pauperism to the extent of 71,398 persons.

Of this number Mr. Rawlinson reports that, provided the weather remain fine and open, by the New Year it would not be difficult to find employment on the public works for from 20,000 to 30,000 operatives; and as these will be for the most part men, a considerable reduction in the rate of pauperism may be looked for under favourable circumstances. Already fifty-two applications have been made for loans for public works, amounting to 721,605*l.* Of these proposed works, those which will require a sum of about 600,000*l.* to complete have been reported upon and sanctioned by the Poor Law Board. Applications have been made, in addition to the above, for loans amounting to 750,000*l.*, making in all 1,350,000*l.* to be spent on the making of roads, sewers, &c.

In considering this subject, it is of importance to know to what extent the peculiar unskilled labour of the cotton-spinners can be made available for these works.

ANCIENT STAINED GLASS.

GLOUCESTER CATHEDRAL.

AN account of the stained glass in the east window of Gloucester Cathedral has been published by Mr. Chas. Winston. At the commencement he says:—

"If it were possible for any one to suppose that Gothic architecture was indigenous of these northern regions, a glance at the windows of the earlier buildings in the style might suffice to undeceive him. The smallness and fewness of the openings, and deep colours of the glazing, are alike suggestive of a climate where a blazing sun exacts this homage to his power. The instinctive desire, under an obscure sky, for light, is exemplified by the increased size given to the windows as the architecture gradually became acclimatised, and by the diminution of their colouring. And after Gothic architecture, in its turn, was superseded by another exotic style, better suited to modern wants, a happy appreciation of the popular love of light characterises the works of the greatest of our national architects, Sir Christopher Wren. It is interesting to follow the progress of these changes, and observe their relation to each other, in the Mediæval styles of architecture and glass painting. In the Norman style, and in the earlier part of the Early English, whenever the use of much white glass occurs, it should be regarded as a submission to dire necessity. But the employment of white glass in large quantity, as a matter of choice, is observable in the latter part of the Early English period; and it continued throughout the Decorated in an increasing ratio to the coloured. With the Perpendicular style,—the style of architecture which we in England associate with the idea of 'walls of glass,'—occurred a remarkable change in the glass manufacture. The coloured glass was made less deep, and generally speaking more even in tint,—alterations absolutely necessary to suit it to the more finished mode of painting then adopted, and which culminated in the Cinque Cento; and white glass, whiter than before, was used in increasing profusion. The result is, of course, to occasion the transmission of a greater amount of light through the glazing. These changes were accompanied, at particular epochs, with remarkable alterations in the details of the design; peculiarities on which the antiquarian mainly relies as affording indications of date, and which are nearly, but not strictly, synchronous with changes in the corresponding details of the architecture,—the change in the architectural detail usually preceding by a few years that of the painted glass. A remarkable illustration of this fact is afforded by the great east window of Gloucester Cathedral, and its glazing. The stone framework of the window is an early but decided example of the Perpendicular style, and the painted glass is a pure example of the Decorated. So pure is it, indeed, that, but for the incontrovertible evidence of date afforded by the heraldry in the window, we should hesitate to proclaim it to be one of the latest instances of the Decorated style of glass painting. It presents no feature really indicative of the great change of style which was then imminent. Its material, its mode of execution, the use of 'smear shading,' the forms of the human features, especially of the eye and nose, all are such as any well-pronounced specimen of the style exhibits. The general design, too, of the glass painting, though in some respects novel, is in strict accordance with the rules of the Decorated style, and has no resemblance to a Perpendicular example except in the very large proportion which the white glass in it bears to the coloured."

After a full description of the window, the writer says in conclusion:—

"Apart from the historical associations which attach to every ancient work, and pre-eminently to the present, it may be doubted whether the Gloucester window does not owe most of its popularity to the fine tone and rich hue of its glass. It would be impossible to meet with white glass that is more solid and silvery in effect. The red is beautifully varied, and is most luminous even in its deepest parts; and the tone of the blue can hardly be surpassed. It must also be admitted that the general design, through the size and simplicity of its parts, is calculated to produce a good and distinct effect at a distance, and that the execution of the painting, rough and imperfect though it be, is, on account of its crispness and boldness, well adapted to the nature of glass, so potent of its kind. But here our admiration should stop. Like all other Mediæval works in painted glass, the present is open to the gravest criticism. The figures are ill-drawn, ungraceful, and insipid. The shading, though sufficient both in depth and quantity, if handled with skill, to have produced a due effect of relief—an effect which obviously had been aimed at,—is so inartificially employed as to be useful only so far as it serves to impart tone and richness to the composition, and by contrast to increase its brilliancy. Every part of the figure, and all the members of the shrinework, seem to be equally in the same plane, though the real depth of the design, as shown by the lines of the drawing, and the very nature of the composition, is considerable. Whatever general distinctness of effect it possesses is due to the completeness with which the simple forms of the white figures and canopies are cut out and insulated by the coloured grounds—an achievement of no great difficulty. I make these remarks, not in a spirit of disparagement—the work was a great one in the uncritical times in which it was executed—but in the hope, if possible, of arousing attention to the lowness of the standard to which we, the more enlightened inhabitants of the nineteeeth century, are labouring to conform in our church decorations,—a circumstance which would be utterly inexplicable did not experience show that a fashion, in every age, has never been the least omnipotent on account of its absurdity, or even ugliness."

GATEWAY, ST. GILES'S-IN-THE-FIELDS.

MORE than one correspondent has drawn our attention to the circumstance that what they term the "carving in stone" of "The Resurrection," in the churchyard gateway of St. Giles's-in-the-Fields, has been taken down, and that it ought not to be allowed to disappear. The carving is in fact in wood; and we are informed that the gateway containing it has been taken down with a view to widening the roadway here, and will doubtless be re-erected shortly. It was quite right to speak in time.

THE VAULTED CEILING OF ST. GEORGE'S HALL, LIVERPOOL.*

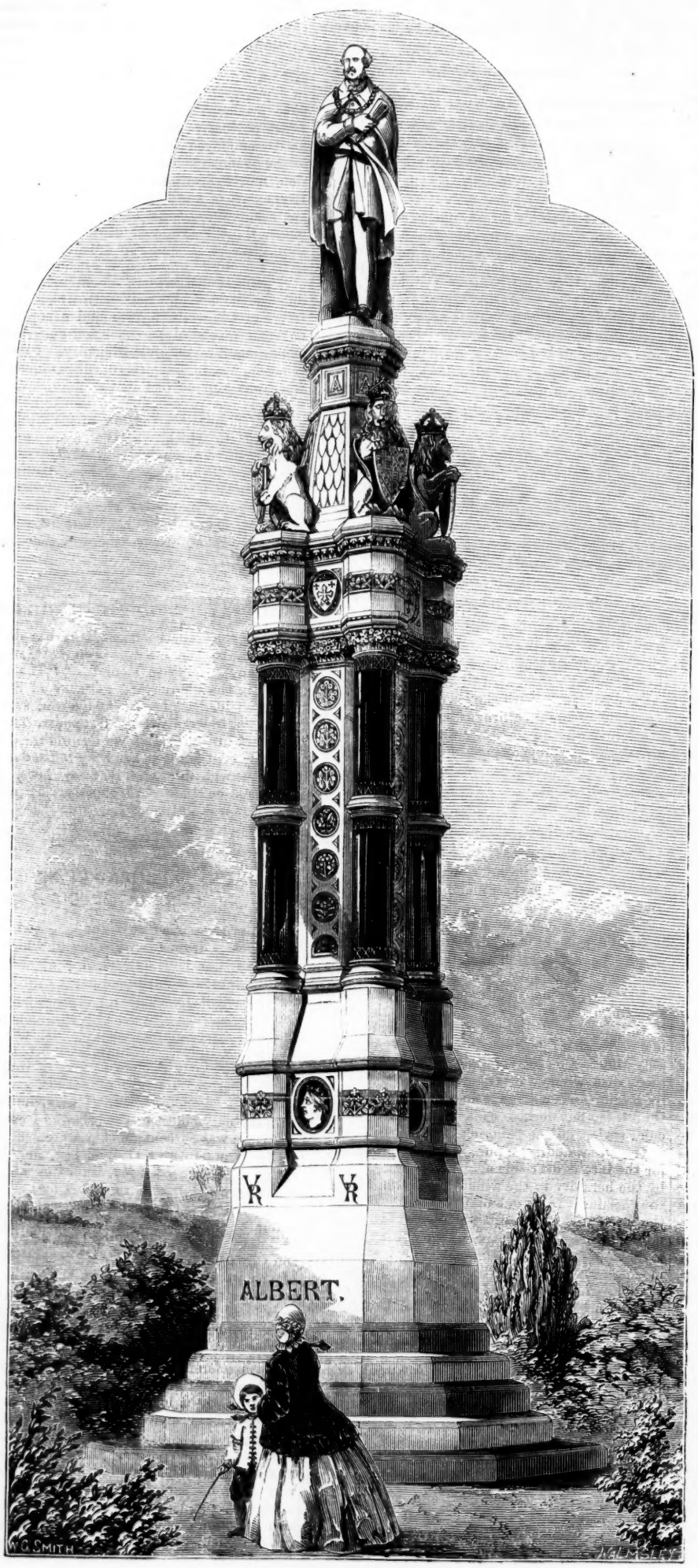
DEAR SIR,—The gist of the long and somewhat angry letter from Mr. Rawlinson, which you inserted in your last *Builder*, first appeared (so far as I know), in a Liverpool paper called the *Post*, on the 1st of December: I replied, therefore, in the same journal, and the editor did me the favour to insert my communication on Saturday last. To that paper I must, therefore, refer Mr. Rawlinson, and such of your readers as may be interested in this matter, for I really cannot ask you to insert so long a communication. I may, however, say that my only object in the remarks I made at the Institute was to contradict a statement I read in a Liverpool paper in October last, that Mr. Rawlinson had succeeded Mr. Elmes as architect of St. George's Hall, and to assert for my deceased friends, Messrs. Elmes and Cockerell, the credit of being the sole architects of that magnificent building. I intended no "sneer" at Mr. Rawlinson when I attributed to him the position of clerk of the works. I saw him at the building apparently performing such duties, but as he has since greatly advanced himself, it is the more creditable to him to have attained his present position from comparatively humble beginnings.

With reference to the brick roof the merit was in the suggestion; but I learn from a friend at Liverpool, by a letter this morning, that subsequently to my conversation with Mr. Cockerell, and my pointing out the brick roof of the Jesuits' church at Munich, Mr. Elmes visited that city, and examined that roof with great minuteness; and that on his return he included it in his design, and added the cost to his estimates. I do not suppose any architect would imagine any great difficulty in its execution even with ordinary bricks, and the demands of Dr. Reid would, in my judgment, increase its stability, and facilitate its execution.

W. TITE.

December 10.

* This communication reached us on Thursday in last week too late for insertion. We hope it will be unnecessary to pursue the matter farther.



THE ALBERT MEMORIAL; ABINGDON, BERKS.

MR. JOHN GIBBS, ARCHITECT.

THE ABINGDON ALBERT MEMORIAL.

The first stone of this memorial of the late Prince Consort was laid on the 22nd of October last. The accompanying engraving represents it. The chief features, it will be seen, are medallions of the Queen on the base; four columns of Mansfield stone, surmounted by sculptured capitals; above, are the arms of the county, diocese, &c., emblazoned; and at the summit a carved pedestal supporting a full-length figure of the lamented Prince. The cost will be about 300*l.*, a considerable part of which, by the exertions of the mayor and other leading inhabitants, has been raised in the town and neighbourhood. The site chosen for the monument is the Recreation-ground, just outside the town, which was opened about twelve months ago for the benefit of the inhabitants, under the new *régime* of Christ's Hospital. The trustees readily gave permission for its erection.

The stone laid bore the following inscription:—

"A.D., 1863. Laid by R. Badcock, Mayor. John Gibbs Architect. Charles Selby, Builder."

A bottle was deposited therein, containing a new florin, shilling, sixpence, penny, and half-penny, and the following record inscribed on parchment, to which numerous signatures were attached:—

"The first stone of the Memorial in course of erection on this spot, was laid by the Mayor of Abingdon, Richard Badcock, in the presence of many loyal witnesses; which Memorial is intended to perpetuate to future generations the illustrious name of his late Royal Highness Prince Albert Francis Augustus Charles Emanuel of Saxe Coburg and Gotha, K.G., Chancellor of the University of Cambridge, and Consort to her Majesty Victoria Queen of England, A.D. 1863, October 22. By universal consent, he will henceforth be known by the exalted title of Albert the Good. The nation, proud of his name, everywhere offers its sympathy to our beloved but bereaved Queen, the mother of peace and love. He was the Patron Prince of all that is noble, useful, beautiful, and true. Learned, wise, and therefore good, he could well hope for other than an earthly crown, even a celestial one in the Paradise of Heaven."

LORD JERVISWOODE ON THE PROVISION OF DWELLINGS.

ARCHITECTURAL INSTITUTE OF SCOTLAND.

In his opening address, Lord Jerviswoode spoke of houses for the working classes. He said—I venture to suggest a scheme so that the greatest of modern inventions for forwarding locomotion should contribute even more directly than at present to the increase of the comfort of our city populations. The plan is no mere creation of imagination. I have seen it in practical operation. I happened to reside for a short time, a few years ago, in the neighbourhood of one of the greatest slate quarries in Wales, the produce of which was carried to places where it is shipped by means of a railway, and I was surprised and pleased to see this railway used constantly as the means of conveying the hundreds—I might, I believe, say thousands—of men employed in the slateworks to and from their respective homes, which might be seen on the hill sides, bordering the line of railway for many miles, and remarkable for their joyous brightness of aspect, neat dwelling-houses, tidy gardens, and bits of arable ground. It was impossible to avoid the thought that no cause could exist why such a system should be confined to one locality; or, on the contrary, that it might be applied, subject to modification in details, to other populous places; and if so, what changes might be wrought on the health, the habits, ay, and the morals of the people! Born and bred in the midst of a happy and com-

COTTAGE HOMES IN BUCKINGHAMSHIRE.*

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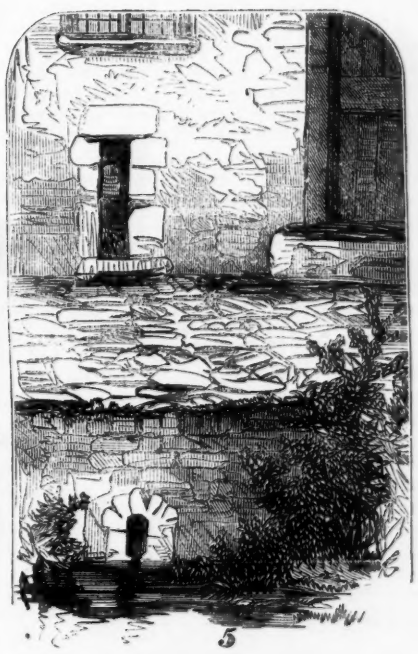

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J.BROWN.

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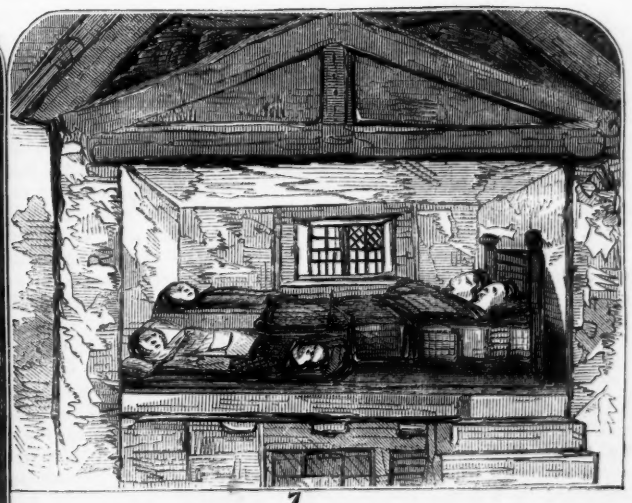

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1 *and* 2. *Cottages at Dinton.* 3. *Part of a Cottage in Spring Gardens, Whitehall, Aylesbury.* 4. *Cottage Construction at Dinton.* 5. *An Attempt at House Drainage, Dinton.* 6 *and* 7. *Aylesbury Interiors.*

[* See pp. 889, 890, *ante.*

paratively comfortable rural population, I have yearned at heart over the miseries of many of the poorer classes of our cities; and it is impossible to practise or to sit, as I have been called on to do, in our criminal courts, without feeling that the question of questions amongst us, and that in reference to which our responsibilities as a Christian people are the heaviest, is what is to be done to lighten the weight which presses so hard on the moral energies of our working classes? I have pondered over the subject, and the more I have thought of it the more have I been drawn to the conviction that apart, of course, from moral and religious agencies, to treat of which is beyond my present object,—the remedy, as respects the grievance with which alone I am dealing, lies in scattering our people over a greater space of ground, and bringing them to the places where they have their employments by means of railways and locomotive or similar power. I believe villages might be built within a few miles of such a town as Edinburgh, having their streets partly occupied by a single line of railway, the train of which would pick up its passengers at their doors, and set them down as near to the scenes of their labours as they now are when scattered through the town itself. I admit that a great practical difficulty attends this scheme, which is to satisfy proprietors that the erection of such villages would be remunerative. Unless they could be made so, I should despair of ultimate success. You are told, with much truth, that in these days masses of the labouring population are here to-day and away to-morrow, and that there is a consequent want of security for due payment of rent, which thus leads to its enhancement. Here, I think, we should be at fault, unless the Legislature should lend its aid; and, although I am far from thinking it the duty of Parliament to interfere on light grounds in matters of social economy, I hold it equally unsound to maintain that it should never interfere at all; and I think it possible that, in this case, well-considered interference might be practicable and beneficial. I would suggest that a scheme should be formed, under which it should be provided that a portion of the earnings of the labourer might, with his own consent and by agreement with his employer, be legally secured in the hands of the latter for payment of the rent of the premises let to the labourer. In this way an owner of house property would not be obliged to adopt those expensive, doubtful, and troublesome means to secure his rents which are now so common. I see nothing in it of which our labouring classes themselves need entertain a jealousy, as I would propose nothing beyond an arrangement optional to the parties, on the efficient working of which, in its details, legislative powers should be brought to bear.

VAULTING AND GROINING.

THE ARCHITECTURAL ASSOCIATION.

THE usual meeting of members was held on Friday evening, the 11th inst., at the House in Conduit-street.

Mr. R. Phené Spiers, V.P., in the chair.

The following gentlemen were, on ballot, elected members of the Association:—

Mr. Clement Dowling, Ballam-hill; Mr. John Davison, 5, Edgware-road; Mr. R. G. Benson, 10, Regent's Park-terrace; Mr. H. Clark, 39, Great James-street, Bedford-row; Mr. W. A. Mackness, 12, Queen's-road, Bayswater; Mr. G. M. M'Clollock, 2, South Bank-terrace, Kensington; Mr. Charles Hanbury, 27, Sackville-street; Mr. A. C. Booth, 12, Clement's-lane; Mr. J. S. Little, 12, Duchess-street; Mr. H. Williams, 52, Old Broad-street; Mr. F. Williams, Gore-road, Stamford-hill.

Mr. C. H. F. Lewes announced a handsome donation of books from Mr. Parker, of Oxford, accompanied by a letter containing his views as to the best course of reading in Gothic architecture.

Mr. A. Smith, and Mr. H. L. Florence, were, on ballot, elected members of the committee in the room of Messrs. Molecey & Paris, resigned.

Mr. R. R. Bayn then read his essay on vaulting and groining, for which a prize had been awarded. He commenced by stating that he quite agreed with the author of a paper already before the Association, "that on a thorough comprehension of the Gothic vault lay the whole gist of Gothic architecture." He (Mr. Bayn) proposed to deal with the subject solely with reference to ecclesiastical buildings, and briefly to glance at its history from the earliest known or attributed examples to its decay and final abandonment. Next, on the several modes of vaulting, domical, circular, and pointed, with a comparison of their relative merits (more particularly French and English), and then with reference to theoretical principles, and the rules by which stability might be insured. Having, with the aid of diagrams, illustrated and explained those portions of his subject, Mr. Bayn proceeded to observe that the Abbey Church of Westminster possessed some remarkably pure and beautiful specimens of vaulting. That of the chapels round the apse was particularly good; also the vaulting of the nave and the bay in the east cloister at the entrance to the chapter-house. The latter were quadripartite in arrangement with two secondary ogive ribs. With regard to the theoretical principle, and to what extent it was possible to decide by rule, so as to insure stability, he observed that the construction of an arch was one of the most important and curious operations in the science of architecture. It enabled the architect to cover spaces which he otherwise could not have accomplished with the materials of which arches are composed, and it enabled him to set up something capable of bearing enormous weight and pressure. To the architects and builders of the Middle Ages we were indebted for some of the grandest examples of this peculiar feature. The skill exhibited in the construction of Mediæval buildings by our forefathers proved that they had a perfect knowledge of the materials they were using and of the best modes of construction. The first great consideration in vaulting was to make it stand, and the great obstacle to overcome was the thrusting force. In many Mediæval buildings flying buttresses were applied at those points where in a groined vault the greater part of the thrust was experienced. In other cases the point or points receiving the thrust were of themselves sufficient to counteract and balance it, and were loaded to an extent to secure the required equilibrium. In all cases there was evident knowledge of the forces dealt with, and the means used to overcome them. In Classic buildings the pressure was overcome by the immense thickness of the walls, and seldom by the use of buttresses. The tendency to overthrow or to thrust out resolved itself into the universal law that the force was represented by the mass or weight of materials in that force minus the friction of the materials on each other. It was evident, therefore, that if the opposing force, either in the shape of thick walls, buttresses, or heavily laden walls above the point of thrust, was the greater, the first force was overcome; and as in the opposing force the centre of gravity was within its base, and it had no tendency to move in the direction of the first force, stability ensued. The inquiry was often made whether a stone roof was a positive necessity to a church built in a true and pure Gothic spirit: generally speaking, it was agreed that it was not necessary. This opinion was probably formed from the examples of flat wooden-roofed Norman churches, as at Peterborough and elsewhere, and the many beautiful little parish churches throughout the country with open wooden roofs. He fancied, however, that it would be difficult to defend a timber roof against a stone vault, even if the former were on such a scale as that of Westminster Hall, though it must be readily admitted that such a span would be next to impossible in stone. The rare examples of modern stone roofs must be supposed to be attributed to the cost of such constructions, and to the disinclination, in a utilitarian age, to expend more on ornament than was barely necessary. He denied that stone roofs were disused because in modern days we did not know how to vault, or in fact because we had lost the secret. He contended that the only secret, if such it could be called, was a comprehension of the composition and resolution of forces. Admitting these to be understood, there was no secret, and there was nothing to find out, and no difficulty in vaulting over any space within reason. It was evident from existing examples of the barrel-vaulted churches of Southern France, of the eleventh and twelfth centuries, that except in the case of very large spans, flying buttresses were not absolutely necessary, and that large spaces could be covered over with a legitimate stone roof inside and out, with the use of a circular or pointed barrel vault, cut up into bays by means of cross arches. A plain stone roof of this description would, in his opinion, be a greater architectural achievement than a timber roof, however rich it might be. But even if the propriety of abolishing stone roofs for nave spaces were conceded, he saw no reason why they should not be used in aisles and crossings. When at Ravenna, he found a beautiful example of vaulting with light materials, and he saw no reason why bricks might not be used for vaulting purposes, so as to combine lightness with strength. The resort to anything like tricks in adapting groining to modern wants, such as banding it with iron, or building-in iron to aid the constructive or suspending part, was, in his opinion, too contemptible for comment. All who had studied ancient examples of church architecture, and contrasted them with our cold stereotyped modern buildings, would, he thought, attribute much of the falling-off apparent in the latter to the absence of groining. As, however, we could not alter the age, and bring back again the spirit that produced such glorious examples of church architecture as those which were raised between the twelfth and fourteenth centuries; and as false effects were to be deprecated; he supposed the architects of the present day must remain contented to vault wherever they could; and this, he believed, might be effected economically, and at the same time truthfully.

Mr. Ridge called attention to a specimen of plain fan vaulting, which he said had lately been put up in Arundel-street by Messrs. W. & H. Smith.

Mr. Bayn questioned whether the example referred to was fan vaulting at all.

Mr. Ridge contended that it certainly was, according to the definition of Professor Willis.

The Chairman said, he quite agreed with Mr. Bayn, that the study of groining was of the utmost importance with a view to a correct knowledge of Gothic architecture. He apprehended, however, that it was greatly necessary that the student of the classic style should also master the art.

After some short discussion, which the lateness of the hour still further curtailed, a vote of thanks was passed to Mr. Bayn for his paper.

The Chairman announced, that the next drawing in the Class of Design would be "Entrance-gates," and that on the 17th of January a paper would be read by Mr. C. J. Adam, "On the Metropolitan Building Act."

OXFORD ARCHITECTURAL SOCIETY.

AT the last meeting of the term, held on December 9th, Professor Goldwin Smith was unanimously elected President.

The Rev. P. G. Medd read a paper, "On the Crypt of St. Gervais, at Rouen, and on some Churches in France." He spoke chiefly of Amiens, Chartres, Rheims, and Strasburg, concluding with an account of the crypt at Rouen, which he thought there was every reason to believe was as old as the third century, though the superstructure was not earlier than the eleventh century.

Mr. Tyssen, of Merton College, gave a summary of some of the most important items in the old churchwardens' account-books of St. Peter's-in-the-East.

Some drawings, by Mr. Buckler, of the paintings on the wall, which were found during the repairs in Headington Church, were exhibited. The chief subjects represented are the Nativity, Flight into Egypt, Massacre of the Innocents, &c. They were found in the south aisle, and their date is probably about the end of the thirteenth or beginning of the fourteenth century.

BRITISH ARCHÆOLOGICAL ASSOCIATION.

A MEETING was held December 9th, Mr. Godwin, V.P., in the chair.

The Chairman announced that the council had had the honour of enrolling his Grace the Lord Archbishop of York as a life associate and contributor to the "Collectanea Archæologica."

Mr. Clifford W. Chaplin, of the Oxford and Cambridge Club, and Mr. George Lane, of the Mess-room, St. James's Palace, were elected associates.

Mr. Gunston exhibited a portion of an iron buckler, with spike as an *umbo*, found at Dowgate-hill. The iron plate was studded with minute brass knobs.

Mr. Cuming exhibited the spike of a similar buckler from the Brocas collection at Wakefield Park, Berks.

Mr. Irvine exhibited an interesting brass lock of the time of Elizabeth. The key, a good piece of work, had a viscount's coronet and the letters B.M., presumed to be those of Brown, Viscount Montagu.

Mr. F. J. Baigent exhibited drawings of an interesting series of bosses in the vaulting beneath the tower of Winchester College, consisting of monograms and other devices with shields of arms, the whole of which Mr. Baigent had been suc-

cessful in reading. The drawings made of them are very good, and were executed during the recent rebuilding of the tower, when the bosses were all taken down. There are about twenty-six in number, and to these may be added a few others from the roof of the Fromand Chantry in the college cloisters, built only a few years before the tower. These drawings are to be engraved, accompanied with biographical notices, for the Association.

Mr. H. Godwin, F.S.A., exhibited a fine silver watch of the seventeenth century.

Mr. Irvine produced tracings of tiles from Whitland Abbey, South Wales; St. Nicholas's Church, Ludlow; Pershore Abbey; also from Dorchester, Oxon, and Westminster, which were referred for arrangement and further consideration.

Mr. Blashill exhibited and described some interesting Roman remains, found near St. Dunstan's in the East, especially a mass of concrete forming part of a tomb.

Various other exhibitions having been made and commented on,

Mr. Saxe Bannister, M.A., read a notice of two MS. lives of Henry V., unpublished, in the British Museum and Lambeth Libraries. He submitted fac-similes of the MSS., and read extracts relating to the king's prisoners and the second campaign in France, and his diplomacy; also to his political economy, in reforming the coin of his French conquest; and to some proceedings towards the Lollards and the Welsh people.

The Rev. E. Kell, F.S.A., gave an account of the finding of further Roman coins in the Isle of Wight.

Mr. E. Roberts, F.S.A., read a paper on Brixworth Church, Northamptonshire, and exhibited views and plans. This gave rise to an animated discussion; after which the Association was adjourned over Christmas, to January 13th, 1864.

TERRA-COTTA PORTICO, LONDON.

A PORTICO has been erected at Viscount Strangford's, in Cumberland-street, Hyde Park, in terra-cotta, by Mr. J. M. Blashfield, of Stamford, from designs by the late Mr. Augustus H. Morant and Mr. J. M. Lockyer. It consists of an entablature carried on three columns at each angle in front, and one column on each side against the front wall of the house. The columns are Corinthian, treated freely: they are of the same diameter throughout, and diapered on the face.

The terra-cotta of which this portico is composed is a kind of porcelain stoneware, being a compound of clay, flint, and other bodies, burnt to a heat at which soft iron will melt, so that partial vitrification of the particles composing the body takes place in the burning. The material is, therefore, affirmed to be indestructible by frost and the alkaline bodies in the London atmosphere, and more readily cleansed from soot and dirt than marble and stone.

The columns are made in parts, and united at the joints with dowels and blue lias cement. The entablature is composed of moulded bricks in the same material. In the cornice all the bricks work as headers, and are made to tail back 9 inches, the bricks varying in depth, width, and length, to suit the details of the work. The longest brick is about 19 inches.

The cost of this work, inclusive of the modelling, is less, we are informed, than it would have been if executed in ordinary brick and stucco. The bricks forming the architrave are made in section to fit a T-bar of galvanized iron, which passes through them and bonds the whole work together.

WESTMINSTER WORKING MEN'S CLUB.

THE third anniversary meeting was held on the 11th instant, Sir R. W. Carden in the chair.

The building has recently been enlarged by taking in an adjoining house, and re-modelled according to plans prepared by Mr. Downes, architect, the contractor being Mr. G. Richardson, of Sloane-street. There are now class-rooms, reading and lecture rooms, in addition to the social club room, library, lavatory, &c. The cost, with the necessary fittings (of the plainest kind,—deal tables and forms with backs, &c.), is 580*l.*, towards which Miss Adeline Cooper, who does so much for the institution, still requires 190*l.*

All the affairs of the Club, as well as the various societies carried on there, are managed entirely by the men themselves, Miss Cooper acting as their treasurer, and adviser when required. We hear with pleasure that most admirable order has been maintained. There has not been one defaulter; and when the books were looked over (above 400) previously to packing them up for the building alterations, not one was missing. The secretary, librarian, and committee, chosen from the body of the members, all give their services gratuitously, the only person paid being the room-keeper, who resides on the premises. Coffee, ginger-beer, cake, and biscuit are supplied at cost price to members, and the Club is open every evening, including Sundays, that being the day of all others when the working man is most exposed to temptation. The institution is entirely unsectarian; the men converse freely on every topic, religious or political, with perfect good temper; and the better educated naturally improve those who have not had equal advantages.

The classes are free, and comprise reading, writing, and cyphering three times a week; a French class, a singing class, and a Bible class, with one hour's simple service on Sunday evenings. The Penny Bank has received as deposits 145*l.* since its commencement in 1861. The Loan Society has granted above 130 loans, representing above 250*l.*, although the capital is not more than 90*l.*, divided among forty-five members. The Sick Fund has given sums varying from 10s. to 20s., to fourteen sick members who had paid 1d. per week for thirteen weeks; and the Barrow Club has furnished ten barrows, of 50s. each, to as many members who are costermongers, and who, at the end of fifty weeks, at 1s. per week, will be the proprietors of their barrows, instead of paying 1s. or 1s. 3d. a week for the hire for years.

There are above 500 members of the Club, and we should be glad to hear of 500 such clubs.

ON CEMENTS.

THE following is a part of a communication signed "James Pulham:" we have not space for the remainder:—

It is a common practice with slow-setting cement, when a moulding is being run, or filled out, to lay some on the brick core, and allow it to get more or less set, and even crusted, according to the time it is left, sometimes till it becomes a crystalline surface; then the adhesion of the next stuff laid on is imperfect and unsound. It is the same with the plain face. As "Cautious" says, it should be finished off at once. Dirty sand is an evil, as the cement will not harden with it, and is crumbly. Some cements set too quickly, so that the workmen cannot use it properly while it is good, before it begins to set: then it is frequently killed,—that is, its hardening property is injured, especially when it is worked up again, and more water added, as is sometimes done. Then it is of very little good, and is crumbly indeed. Mouldings are often run out or finished with all cement, no sand in it, to make it easier and finer faced, which is sure to crack.

The cement is frequently laid on brickwork dry, or nearly so: then the moisture is absorbed before it can have time to set, and it will not harden. This is worse, too, when exposed to the heat of the sun or a drying wind: it will then dry before it can set, if it is slow-setting, as it should be; and if quick-setting, the injury done by drying it up directly is even more, and may generally be avoided by being sheltered from the sun for a week, and when cool it should be wetted frequently, to retard its drying quickly. I know that, with the haste with which much of it is done, it would be inconvenient, and will not pay at current prices, which have been reduced too low (especially by the common system of sub-letting), for the time to be devoted to it, and for the trouble that is necessary to insure durability; and this an employer should, if paid sufficiently, be able to give, and, if experienced, he can do it, as of course it had better not be done at all than done badly.

It is generally the best work that is done in the autumn and winter, if it escapes the frost a few days after it is done, as it then sets and hardens gradually; but cement should not be put on brickwork while the mortar is wet, as that causes cracks.

Portland cement has this great advantage over others, that it can, with good management, be worked in winter, while other cements cannot without great risk of the frost injuring them before they are dry. It is sometimes the case that, to hasten the setting when slow, more cement is added to make it set quicker, and will make it crack and burst.

It often happens, where brickwork is formed for a core to mouldings, that it is irregular, requiring the cement thick in one place and none scarcely in other parts. Where this is the case, it is better to have recourse to good Roman cement, to dub it out to within three-fourths of an inch with pieces of brick, rather than have great thicknesses of the Portland, as great thicknesses should be avoided, except where a greater proportion of sand or gravel can be used than in running a moulding. It is best to have uniformity of thickness; and the best way is to use a running mould in forming the brick core when building, though more trouble to the bricklayers. I have often had to put whole bricks on a brick core to fill it out; but a better method with top projections, which I adopt where I can, is to have a box-mould of wood, for instance, of the *cyma recta*, frequently forming the top: fix it up, and fill it in with the brick and cement. It is then one solid mass, such as is not possible by the piece-meal way of adding bit by bit. It is no more expense where great length is required.

But cheapness is too much the order of the day for all this trouble to be taken, at present prices, though more may be done for greater perfection, which should be our aim. Then its durability is certain; and, even as it is, there is much of it in far better condition than the stone most commonly used in buildings of late years.

COMPETITION.

Congleton Town-hall.—At a special meeting of the town council, "for the purpose of adopting and confirming the report of the Town-hall Committee with reference to the site of the new Town-hall, and as to the amount of premium to be given to the successful architect, and generally on the subject of the new Town-hall," the mayor stated that the committee had recommended that the old site be adopted for the new Town-hall; that a premium of 25*l.* be given to the architect tendering the best plan or design, and that the time of competition be extended from the 1st to the 18th January. The Town Clerk stated that upwards of 140 applications by architects had been received. Several architects had inquired whether the successful competitor for the plans and designs would be entrusted with the superintendence of the work. He (Mr. Moorhouse) had given no definite reply to this inquiry, inasmuch as it rested with the council. It was not unfrequently the case, that the plans and designs of one architect were entrusted to another to be carried out. Mr. Warrington suggested that the fund intended for the contemplated memorial to the late Mr. Bullock might be expended in the erection of a clock tower in connexion with the new Town-hall. The committee's report was adopted. Mr. Radley then observed that if the sum of 5,000*l.* was expended in the erection of the proposed building, some special contract should be made with reference to the architect's commission for superintending the work. The usual per centage on smaller sums was, he believed, something like five per cent., but in the case of a sum of money like the one proposed, it was customary to make some reduction in the commission. A short discussion ensued, during which it was mentioned that three or three and a half per cent. was the commission usually charged on large sums. A question was asked whether, if a sum of 250*l.* were paid to the architect for his commission, it would not include the salary of the clerk of the works. Some members thought it would, others thought it would not, and others thought it ought. The subject was ultimately allowed to stand over, Mr. Radley explaining that his object in mentioning it was, that there might be some delicacy in bringing it forward after an architect had been appointed. It is to be hoped that competitors will be warned in time, and insist on a proper understanding as to payment of the ordinary commission.

GAS.

THE Worcester Gas Company have resolved to reduce the price of gas to private consumers from 4s. 6d. to 4s. per 1,000 cubic feet. A reduction of the charge for the public lamps 5s. per lamp—that is, to 3*l.* 5s. per lamp per annum—has also been agreed to.——A contemporary states that a shopkeeper in Oxford-street is trying (what he erroneously calls) the French mode of lighting. The gas-burners are let into the ceiling above the windows, where they encircle small funnels. In fact, it is the application to shop windows of what has been called the "sun light." "There are no strong shadows, no dangerous wavering flames, no encumbrance of gaselier stems," says our authority. "The light is intense yet not dazzling, and, above all, it is equally

distributed. The ventilation is excellent, and safety and health are both secured. We believe [it is added] this excellent system of lighting originated at some theatre in Paris." This is a mistake. It originated at the Greenock theatre, in Scotland, upwards of twenty years since, as recorded in the *Builder* some years afterwards by Mr. John E. Dove, who suggested and applied it at Greenock. It *was*, some years since, also tried, we believe, in a Paris theatre; and the principle, that of lighting exclusively from above, was even adopted, on one occasion, together with the electric light, in her Majesty's Theatre, Haymarket. The "sun-light" system, however, is now well known, as a favourite mode of lighting churches and halls in this country.——A letter from Naples has the subjoined:—"Gas-pipes are now being laid down in the streets of this city. Hitherto, all the streets except three or four had been badly lighted with oil. It is a French company which has undertaken this task. The gasometer, built near the railway station, is, in the opinion of competent men, a masterpiece in its way. It was solemnly inaugurated in the presence of the hereditary prince, the prefect, and the syndic, a few days ago, and a dinner was given on the occasion to all the workmen."

ANNUAL REPORT OF METROPOLITAN BOARD OF WORKS.

An elaborate "Report" for 1862-3, with "Account in Abstract," has been printed by authority of the Board by Messrs. Brickhill & Smith, of Newington Butts, Surrey. Much of the information given in the "Report" has already been brought before our readers at different times. The general summary of receipts and expenditure for the year shows the total receipts to have been 1,448,694*l.* 6s. 5d.; and the total expenditure 1,412,950*l.* 10s. 3d. The engineer's report states that "the total value of the Main Drainage contracts, either completed or in course of execution, is about two millions and three-quarters, involving the construction of upwards of sixty-five miles of main intercepting sewers, varying in size from 12 inches by 9 feet 6 inches to 3 feet by 2 feet; together with the pumping stations, reservoirs, storm and other outlets, overflow weirs, and numerous minor works in connexion therewith." He draws attention to the increased expenditure from rise in the value of materials and labour since 1860: that increase he estimates at upwards of 30 per cent. The cost of the portion of the works done within the present year amounts to 720,229*l.* for works alone extending to forty-five miles in length.

MORE DWELLINGS FOR THE WORKING CLASSES AT EDINBURGH.

Large additions have this year been made to the number of the dwellings for this class of citizens, especially at the west end. Considerable stir and bustle in building have prevailed during the whole summer, and at this late season the works are being pushed forward with great energy. At the Grove and Spittal street alone there are in progress upwards of twenty "lands" of houses, besides others in Fountainbridge, which will contribute nearly 200 dwelling-houses, with accommodation suitable for the industrious and working classes. These buildings have in the majority of cases sprung into existence by the co-operation of those who have experienced more or less inconvenience from the high rents and scarcity of dwellings suitable for them. Those erected by the Fountainbridge Church-Building Association, the Cricket Park Building Association, and the Grove Park Building Company, on the south side of Upper Grove-street, consist of six "lands" of four-story houses, now nearly ready for occupation. This block of buildings is situate on the south side of the Caledonian Railway, and commands a fine view of the Corstorphine hills and adjacent country. The fronts of the houses are of the plainest description, and have a somewhat rustic appearance, being built of a square, natural-faced rubble, the fronts of the doors and window-dressings being also of natural-faced stone, with the margins tooled. The access to the tenement is by common stairs, each house having bells and opening apparatus for the doors at the foot of the stairs. The houses are arranged in half-flats, and vary in their accommodation and cost. The cost of three-apartment houses averages about 135*l.*, and larger houses from 160*l.* to 195*l.* The plans were prepared by Messrs. Paterson & Shiells, architects; and the tenders received were all under the architects' probable estimate.——The annual general meeting of the shareholders of the Edinburgh Workmen's Houses Improvement Company (Limited) has been held. The report of the directors congratulated the shareholders on the satisfactory progress of the company. The Prince Albert Buildings, Dumbiedykes, consisting of 132 houses, are now completed, and have been partly occupied since Whit-Sunday last. The rents range between 9*l.* 10s., and 13*l.*, the majority being 10*l.* 10s. and 12*l.* 12s. Several of the houses have been sold at prices from 150*l.* to 185*l.* A dividend in the mean time of 2½ per cent. was recommended, and the report was adopted.

NEWS FROM SYDNEY, NEW SOUTH WALES.

The temporary Post-office in Wynyard-square has been commenced. Increased accommodation has long been required at the old premises in George-street, and a plan for an entirely new building, retaining only the Doric peristyle, was prepared by the Colonial Architect, and approved of by the Government. The temporary building, which is very unpretentious in appearance, was ready for the galvanized roof by last despatches in September. It is about 200 feet in length, by 70 in width, and will have stables at the back for the telegraph department, as well as for the post-office. The contract has been taken by Mr. W. Harmer for the sum of 2,975*l.*, and is to be completed in three months. In the meantime tenders will be invited for the alterations at the old Post-office, in order that they may be commenced immediately upon the removal of the department to Wynyard-square.

The masonry for the new wing of the Australian Museum in Hyde Park was approaching completion at the date of our correspondent's letter: preparations were being made for the roofing.

The new wing of the Registry-office, in Elizabeth-street, was on the point of completion.

A contract had been taken by Mr. Gwyneth, for some extensive works on Spectacle Island, to cost about 7,000*l.* These will consist of a powder-magazine, quarters for a superintendent, quarters for soldiers and for labourers, a wharf, and a jetty.

The walls of the Australian Mutual Provident Society's new office were up to the height of 40 feet, the greater portion of the fluted columns of the upper story being fixed.

Various offices, stores, and houses for business firms and private residences were in progress.

The only large work that the city corporation were carrying out was a 6-feet oviform stone sewer, 390 feet in length, from Hay-street to the water-course where it crosses Elizabeth-street, forming a continuation of the stone tunnel carrying the sewer from the Haymarket to Darling Harbour. The sewer has been contracted for by Mr. Calder.

The seventh annual report of births, deaths, and marriages in the colony records the facts that in the year 1862, there were solemnized 3,326 marriages, that 15,434 children were born, and that 6,524 persons died. Hence it results that the natural increase of the population within the year, from the excess of births over deaths, and of course exclusive of immigration, numbered 8,910 souls.

The mean of six years shows that to every 1,000 persons living in the colony, 9 couples are married in a year, 42 children are born, and 17 persons die; or, one person in 54 is married, one child is born to every 24 persons, and in 58 persons of all ages one died.

France gives 26, Great Britain 34, births to each thousand, while New South Wales gives 42. In France the mortality is nearly 28 per thousand, in England 22, in Scotland 21, in New South Wales 17¼. Of 100,000 persons living in the respective countries, there are married in the colony in a year 184 more than in England, 237 more than in France, 497 more than in Scotland. To the same number living there are 792 births in New South Wales more than in Great Britain, and 1,568 more than in France; while the rate of mortality is below that of Scotland by 362, lower than that of England by 486, lower than that of France by 1,042.

In 1862 there were 33 children born out of wedlock to every 1,000 born in wedlock: the mean average for six years was 29. The proportion of illegitimate births in England, during the six years ended with 1860, averaged 65 per thousand; more than two to one of the average in the colony. In Scotland, last year, the illegitimate births were 95 per thousand,—nearly 10 per cent.

The prevailing diseases, as taken in August last, were those of the nervous and respiratory systems, which proved fatal in 50 per cent. of the aggregate number of deaths.

The infantile mortality was 45·00 per cent. of the total deaths.

THE FALL OF A HOUSE IN ISLINGTON.

On Monday last the adjourned inquest on the bodies of the men killed by the fall of the Three Wheatsheaves public-house, Islington-green, was resumed before Dr. Lankester, the Coroner.

Mr. William Moseley, district surveyor for the western portion of Islington, was examined at some length. He said it was his duty to carry out the provisions of the Metropolitan Buildings Act by inspecting works in progress to see that they were built in such a manner as to prevent the spreading of fire, also that certain works were of a particular thickness and construction. The fall of the building took place from circumstances entirely beyond his control. He had made a report to the Metropolitan Board of Works on the subject, in which he stated that he was of opinion that the accident occurred from want of proper adhesion between the mortar and cement used in the construction of the building. He had seen nothing defective in the materials, and he therefore came to the conclusion that the accident happened from the too rapid heaping up of the brick-work, which he had no power to prevent. He could not say whether the piers gave way first or not, or whether they were sufficiently strong. As long as the Act was complied with he had no power to interfere with the construction of the walls and piers, even if built too slightly. If he had considered them to be too weak to bear the weight imposed on them he could only have interfered as a matter of common humanity. There were no special directions for the building of isolated piers. While the building was in progress he never saw nor had any reason to suppose that it was in any danger. Speaking only as an architect, he thought it a reckless thing for the builder to undertake to finish the building in so short a time. The primary cause of the falling of the building was the undue haste with which the work was carried forward. There must have been some secondary cause, such as the weight of the cornice, the undercutting of the piers, or the removal of the shores, but he could not say which. He understood from his assistant that there was a cornice being put up. On the Saturday previous to the accident, on visiting the building, he thought the work was going on very rapidly, but not dangerously so. With regard to the bressummer he thought it of sufficient size, and placed in a proper position.

Edward Kemp, a mason employed in the building when it fell, stated that he was in the basement at the time. He had on that morning fixed the right and left doorsteps. There was no strut to the left doorway, but he removed one from the right door. He did not cut anything away from the right doorway, but he did from the left. There was a space left for the step, and it was the top of that he cut away to the depth of half an inch. The doorstep on the left was 5 feet 3 inches by 14 inches by 7 inches: the one on the right 5 feet 3 inches by 14 inches by 6 inches. The directions as to size were given by Mr. Chapman. Mr. Williams was there while he was fixing the first step, but he did not think it necessary to ask him whether he should cut away the brickwork or not, but did it on his own responsibility.

Mr. Williams, the architect concerned, said he had instructions, and it was his intention to see that the work was completed, as far as the roofing in and bar story went, by the 7th of December. Generally speaking the work was executed according to his directions, with the following exceptions:—The pier adjoining the Agricultural Hall was not carried up according to his drawings. The pier was built only half the size he had directed, but he could not say whether this deficiency produced the fall, but it might be one of the secondary causes alluded to by Mr. Moseley. He first discovered the discrepancy between the pier and the plan when the former was about 4 feet high. He thought it advisable to have it altered, and gave directions for its being pulled down and rebuilt the proper size into a chase in the wall. It was not until after the accident that had happened that he had discovered that those directions had not been complied with. The bressummer was not of the size indicated in the specifications, but the alterations were made by his (witness's) authority. He did not attach very much importance to the alteration of the pier, and omitted to see that it had been done. As to the bressummer, he repeated his opinion that it was placed in the best position. The pier next the Agricultural Hall should have been 14 inches square and let 7 inches into the wall, but it was built only 14 inches by 7 inches. The bressummer was cut 7 inches into the wall, but according to the Act it should have gone in only 2½ inches. If he had to build the same building again he should employ the same dimensions. The primary cause of the accident was want of cohesiveness in the mortar. In this and in other respects he agreed with Mr. Moseley as to the secondary causes of the fall. He did not think the bressummer had anything to do with the accident. A 4-inch step would have been preferable to a 7-inch step as no bricks need then have been cut away. He considered the cutting away detrimental. The specification stated that a 4-inch step was to be used, and there would have been no necessity to cut away the brickwork had it been made of the thickness specified. He did not think the weight of the cornice had anything to do with the matter. The accident, no doubt, occurred from a number of causes combined.

Mr. William Chapman, the contractor for the building, stated, in the course of his evidence, that he ordered the pier to be pulled down and rebuilt, and saw it commenced. Mr. Williams directed it to be chased, but only part was chased, the rest being toothed. He blamed the bricklayer for not chasing it as he had been told, at the same time he attached no importance to it. He felt certain that the fall of the building had nothing to do with the pier in question. He could not state positively the cause of the accident. He saw that the two piers were buckling, the left one more than the other, and immediately directed the carpenters to shore up the doorway. One cause of the accident was the buckling of the piers; but he could not account for their doing so. The materials and workmanship were excellent. No doubt, it would have been

better had the piers been of the same thickness behind as in front. The crack he saw was in the centre of the 9-inch reveal. As an experienced builder he considered that the bressummer was sufficiently supported by the Agricultural Hall wall, without any corner pier. There was no strain on the shore at the right end door: had the pier been weak there would have been a strain. He did not agree with the other witnesses that the dampness of the mortar was a primary cause of the accident. He rather thought the piers had more to do with it.

The witness was asked if he thought the piers were strong enough, and ultimately said that he did not think they were strong enough. He thought that going on with the building before the mortar was set was a hazardous operation.

The Coroner having summed up at some length, the jury retired to consider their verdict. After an absence of more than an hour they returned, and the foreman, addressing the Coroner, said that, although they were perfectly of accord as to the death of the men being accidental, there was a majority of 16 to 5 in favour of a resolution censuring the architect. He begged leave to say that he (the foreman) was in the minority.

The Coroner, in reply, said that both verdict and resolution would be recorded, the foreman signing the former, and the latter being signed by the sixteen who had agreed to it.

A verdict of "Death through an accident caused by the insufficiency of the central piers" was then recorded.

The resolution was to the effect that the piers having been built according to the plans and under the superintendence of Mr. Williams, the architect, the members of the jury signing it were of opinion that he deserved the severest censure.

The accident, as it seems to us, was led up to rather by the mode of construction and the improper weakening of the piers at the bottom, by the omission of two courses, and the further cutting away for the steps, than by their want of size. As was pointed out in our last, the bressummer did not carry the front 4 inches of the wall above: this thickness of it came down directly on to the piers, by means of 4-inch work and arches, in front of the bressummer. The facing-bricks of the wall, unless the work was executed very differently from what we usually find it, were probably but slightly tied into the inner 9 inches of the wall. Load the top of this with a projecting core for a cornice, and there, remembering too, that a nick 6 inches wide has been left out under the front 4 inches at the bottom of the piers, you have an arrangement very well calculated to give an unequal pressure, produce a slip, and bring down the whole.

FALL OF A GRANARY AT BECCLES.

DURING the late gales a loaded granary, recently erected, fell at Beccles, killing a bricklayer, who had gone to the wall for shelter from the wind. At the coroner's inquest, Mr. J. D. Botwright, of Bungay, builder, who had been appointed by the jury to examine and report upon the state of the ruins, and the probable cause of the accident, gave his report and evidence to the effect that the real cause of the accident was the want of ties. The materials were good, although the clamped red bricks of which it consisted were very much broken in the fall. The beams of the upper story were deflected 1½ inch, and ought to have had iron columns to support them in the centre, on account of the height of the upper story; but the want of strong iron anchors passing through the walls allowed the south wall to bulge ¾ of an inch, and was the main cause of the fall; the influence of the wind alone not being material. The proprietor of the granary said he was a merchant, and employed Mr. Ingram, of Beccles, to build the granary under the direction of Mr. Toll, as architect, whom he employed in his regular business as a merchant, and who was skilled in building, of which he had a great deal of practice. Another of his men acted as carpenter. He was aware the building would be subject to constant vibration from passing trains, and had it very substantially built on that account. The jury returned a verdict of "Accidental death," and adjudged "that the building fell from accidental causes," but added, "that they considered a want of judgment had been displayed in the construction of the building," and suggested "that iron columns and anchors and ties should be added to the building, in the manner named by Mr. Botwright."

CHURCH-BUILDING NEWS.

Findern.—The church here, according to the *Derbyshire Advertiser*, has been opened. The original parish church was much dilapidated. The new church, designed by Messrs. Stevens & Robinson, is built in the Early Decorated style, and stands on the old foundations, with additional length at the west end of nave, and a new north aisle separated from the nave by an arcade of three compartments, and cylindrical pillars, bases, and capitals. By means of these extensions increased accommodation for eighty persons has been obtained. Both porch and tower were for a long time doubtful features, and the detail is of the simplest kind. The size of the church internally is, nave 38 feet by 17 feet 9 inches, chancel 24 feet by 14 feet, north aisle 31 feet by 12 feet, tower 9 feet square. There is also a vestry and south porch. The highest point of the roof is 32 feet from the ground line, and the tower is 37 feet high to the springing of the spire, which is square, with four Lucerne windows, the total height being 77 feet. The roofs of the nave and chancel have trussed principals springing from corbels, and the north aisle trussed rafters, the whole ceiled between the rafters. The whole of the floors of passages, porch, and chancel, are of tiles, the latter boarded with alabaster. The total cost of the church will be about 1,450*l.*, and the work has been executed by Mr. Elliott, of Ashby. The heating, by Gill stoves, has been furnished by the Derwent foundry.

Manchester.—St. Ann's Church, Brindle Heath, has been opened for divine service. The site is the burial-ground of the old St. Thomas's Church. The church contains about 300 sittings, all free. In plan it consists of a nave of three and a half bays; a south aisle of three bays, divided from the nave by an unclerestoried arcade, the columns of which are circular, and the arches of two unchamfered orders. The main entrance is by a south-western porch, gabled transversely to the aisle. The chancel is entered from the nave by a broad and pointed arch, with moulded stone imposts, and rises two steps above the nave floor. The sanctuary rises one step more, and the Lord's table stands on a foot-pace. The south chancel aisle is screened off for organ chamber and sacristies. At the west end and in the centre of the nave is the font, of Bath stone, and circular in plan. Above the font, over two tall uncusped lancets, is a rose window, composed of eight quatre-foiled circles, with a sex-foiled circle in the centre. This has been filled with stained glass by Messrs. Edmundson. The subject is the legendary one of St. Ann teaching her daughter, the Virgin Mary, to read. There are, besides, symbols and grisaille work. The east window of the chancel, which is of three lights and traceried, contains "Christ, the good Shepherd," and grisaille work, with emblems, by Messrs. Heaton, Butler, & Bayne. The other windows are filled with plain tinted glass, in lead quarries. A Scudamore organ has been built by Eccleston & Bowes, and is placed behind the south choir seats. The heating apparatus was provided by Mr. Haden, of Trowbridge. The church is built of red brick, relieved with dark blue, in bands and patterns; and the roofs are covered with tiles ornamentally disposed. The south windows are broad, coupled lancets; and the north the same, with a trefoil or a quatrefoil above, inclosed under one pointed arch. Near the west end of the ridge of the nave roof is a wooden-framed belfry, covered with shingle. The churchyard has been put in order, and the walls nearly all rebuilt. The contract has been carried out by Messrs. Thackrah & Pierce, of Stockport, under the direction of the architect, Mr. J. Medland Taylor, of Manchester.

Frampton (*Boston*).—St. Michael's Church, Frampton, has been opened for divine service. The architect was Mr. Fowler, of Louth; and the contractor, Mr. White, of Alford. The plan consists of a nave, bell-turret, south porch, chancel, terminating in a semi-octangular apse, and vestry of the First Pointed period. There is an octangular bell-turret, with a Mansfield stone pillar set at each of its angles, springing from a carved corbel in the western front, and covered by a tapering spirelet. The whole church is built of Ancaster stone, and its roof is covered with brindled Staffordshire tiles. Within, the walls are lined with red brickwork, adorned by a band or cornice; chocolate and white terra-cotta quatrefoils, and relieved by courses of stone and white bricks.

Norwich.—The restoration of the parish church of St. Nicholas is being carried on. The estimated cost of the contemplated works is 20,000*l.*, and they must take some years to complete. It is proposed to divide the work into portions, but no part to be commenced until the amount estimated for its completion has been received. The committee propose to adopt the following order:—In the first year, the architect recommends that the tower be refaced. The tower is the central point of the building; it is therefore necessary that its safety should first be secured. All the heavy work of the tower ought to be completed before the roofs are touched. And special subscriptions have been received towards the restoration of the tower. In the second year, the chancel to be restored; the partitions dividing the chancel from the rest of the church to be removed; and the chancel, with the transepts, prepared to receive the congregation for Divine service. In the third year, the south aisle to be restored. In the fourth year, the west front to be refaced and the western pinnacles rebuilt. The further works contemplated to follow as may be determined.

Welton (*Yorkshire*).—The ancient parish church of Welton, which for nearly eighteen months past has been in course of complete restoration, has been re-opened. Both the interior and the exterior of the church have been restored. Mr. Scott was the architect employed, and in his opinion the church appears to have been built at the end of the eleventh century, but of the architecture of that period only a small portion of the tower piers remain. The chancel was in so utterly shattered a condition that it was necessary to rebuild it. The old form has been preserved as far as possible, but the nave, which was formerly excessively short, has been lengthened, and an aisle added on its south side. The chancel has been repaired, and the tower, which had lost its upper parts, has had a parapet added, and been otherwise improved. The style adopted is the Early Decorated. A large new painted glass window has been placed in the east end of the building, the cost of which is entirely defrayed by the Rev. T. B. Paget, the vicar. The subjects are the four Evangelists, and the work has been executed by Messrs. Clayton & Bell, of London. The whole of the church is fitted with stalls of carved oak. One of the communion chairs has been carved by Mrs. Paget, the vicar's wife. The cost of restoration (about 6,000*l.*), has been mainly defrayed by Miss Broadley. The clerk of the works was Mr. Sissons, of Hull; and the contractors for the rebuilding of the fabric were Messrs. Simpson & Malone, Hull.

Masborough.—The foundation stone of a new church, to be called the Church of St. John the Evangelist, was to be laid by the Archbishop of York on Monday last. The site is near the railway station. The church will be built in the Transition style, and will accommodate 800 persons; namely, 600 adults and 200 children. The cost will be about 3,000*l.*, exclusive of tower and spire, which will require another 1,000*l.* Nearly 3,000*l.*, or sufficient to complete the church, without the tower and spire, have been already subscribed. The whole of the seats in the church will be free and unappropriated. Mr. W. White, of London, is the architect; and Mr. C. Ripley, of Masborough, the builder.

Alnwick.—The works connected with the reconstruction and restoration of St. Michael's church, which have been going on for several months, are now completed; and the church has been re-opened for public service. The gallery has been removed. The clerestory windows have been filled up, and additional arches and piers inserted between the nave and aisles. The centre window, with another in the east end and three in the south front, the stone-work of which had become entirely decayed from lapse of time, and one in the west end, have been taken out and renewed with windows in the Perpendicular order, after the pattern of those removed. The old close seats have been replaced by open benches. The exterior has been repaired. Two new buttresses have been built on to the east end. A window has been inserted in the south porch, and the turret and staircase in the south-east angle of the church repaired. A new organ, by Messrs. Forster & Forster, of London, has been obtained, and placed at the north side of the church. The whole of the works have been executed under the immediate direction and superintendence of Mr. Salvin, architect; the contractors being Messrs. Smith, of London.

DISSENTING AND ROMAN CATHOLIC CHURCH-BUILDING NEWS.

Canterbury.—Miss Hales, the proprietress of the Hales Place estate, Canterbury, on which the show of the Royal Agricultural Society of England was held in 1860, entered a French convent some time ago. She has returned home, intending to build a convent on her own estate and at her own expense. The site, 30 acres in extent, has been marked out, and plans of the conventual buildings have been prepared by Mr. Pugin, of Ramsgate, architect. The proposed buildings, which consist of a church, convent, farm-buildings, &c., are to be inclosed within a high brick wall; and the contract for the buildings alone is 34,354*l.*

Cardiff.—The chief stone of a new Methodist Free Church has been laid here. The building,

which is in Guildford-street, will be in the form of an oblong square, having the principal entrance facing Bridge-street. The front is in the Grecian Doric style, being composed entirely of Bath stone, with large pilasters between the windows. The interior will be divided into three rows of open pews, running the entire length of the building, with a gallery along each side and one end of the building, affording accommodation for 800 people. In the centre aisle is a raised platform, instead of a pulpit. The place will be ventilated by means of roof ventilators, and warmed during the winter by hot air. The building is 70 feet long by 40 feet wide. The cost will be about 1,600*l*. The builder is Mr. Gooderidge, and the architects are Messrs. Hartland & Son, both of Cardiff.

Montgomery.—The foundation-stone of a new Wesleyan chapel has been laid here. It is in the Gothic style, and will accommodate 200 persons. It is entered from the south end by a porch constructed of wood, and glazed with rough plate-glass. At the south-east corner is a small bell-turret, covered with slates, and on the west side is the vestry. The sides of the chapel are terminated with transepts, which add to the height of the chapel. The walls are of red brick, with Bath stone dressings, and bands of green stone. In the interior, the pews are divided into three bays, with a pulpit at the north end, at the back of which is a five-light tracery-headed window. At the south end, over the porch, is a circular cusped window, and at the side of the porch is a two-light quatrefoil headed window. The east and west sides are each lighted with three two-light trefoil-headed windows. The amount of the contract is 380*l*. Mr. Evans, of Montgomery, is the builder, under the direction of Mr. Potter, of Welshpool, from the designs of Mr. W. H. Spaull, of Oswestry, architect.

Stretford (*Manchester*).—A new Roman Catholic church, dedicated to St. Ann, has been opened at Stretford by the Roman Catholic Bishop of Salford. The new church has been designed by Mr. E. W. Pugin. Sir Humphrey de Trafford has erected the church at his own expense. The west front stands 12 feet from the main road in Stretford, and comprises a gable 62 feet in height, in the centre of which is the chief entrance. Above the entrance is an immense wheel window, inlet with stained glass. It encloses eight cusped circles and a six-cusped circle in the centre. The window has a large cross with the figure of our Lord crucified. The window is enclosed by deeply recessed jambs and pointed arch mouldings. The only other important external features are the tower and spire, which are on the north side, and are almost entirely detached, owing to the comparative lowness of the aisles. The spire is about 130 feet to the top of the cross. The interior of the church is divided into nave, aisles, and sanctuary. Each aisle is lighted by nine two-light windows, with tracery heads, and is divided from the nave by pillars of red Mansfield stone, which are surmounted by carved foliated capitals, and support some moulded pointed arches. The roof of the nave is open to the edge, and the timbers are stained. The principals rest on carved corbels. The chancel roof is panelled, and the principals rest on carved caps, shafts of red Mansfield, and the bases thereof on angels. The reredos is 16 feet by 12 feet wide, consisting of three moulded recessed arches. In the centre is a group of seventeen angels, in full relief, adoring the monogram of our Lord. On each side are groups of ten angels adoring and holding towards the monogram the emblem of the Passion of our Lord. Crowning the arches is a cresting of angels and lilies, conventionally arrayed. The altar is 9 feet long, with green marble columns and carved capitals, of the wheat and the vine. In the frontal, deeply recessed, is a group, 7 feet, of the Four-and-twenty Elders, crowned, having harps, kneeling and adoring the Lamb on the throne, with the Book of Life,—the altar subjects representing the Old Law, and the reredos the New. The whole of the reredos and altar work was executed from the designs and under the direction of the architect, by Mr. R. L. Boulton, of Worcester, sculptor. The sanctuary is a continuation of the nave, and terminates in a four-sided apse, pierced by four large stained glass windows, of two lights each. The interior dimensions are as follows:—Extreme total length, 103 feet; aisles, 82 feet; chancel, 24 feet; extreme total width, 47 feet; the nave being 27 feet clear, and the aisles 5 feet. The aisles are merely passages, all the benches being in the nave, though, as in the latter the window recesses are deep, continued down to the floor, and have only piers between, the width may be called 8 feet. The height of the nave to the ridge is 52 feet, and similar height of aisles, 21 feet. The church is built of Yorkshire parpoints, with dressings of Stourton. Mr. Glaister, of Liverpool, was the contractor. The carving was executed, as we have said, by Mr. Boulton, of Worcester; and the stained glass and metal-work were by Messrs. Hardman & Co.

Wexford (*Ireland*).—A new Roman Catholic church is being erected at Lady's Island, in the county of Wexford. The new church will consist of nave, chancel, aisles, tower, porch, &c., and will be in the style of the fourteenth century. Its extreme dimensions are, length, 108 feet; breadth, 44 feet; height to centre of groined ceiling, 40 feet. The tower and spire to the top of the cross will be 112 feet. The exterior masonry is of granite, with Whitehaven red sandstone dressings. Red, white, and black marble is used for the columns and base of the interior. The architects are Messrs. Pugin & Ashlin; the builders, Messrs. Pierce, of Wexford. The total cost will be about 3,500*l*.

SCHOOL-BUILDING NEWS.

Cranley.—The Archbishop of Canterbury has laid the foundation-stone of the Surrey County Middle-class Schools, at Cranley, near Guildford. The object sought is the provision of a sound and plain education, based on the principles of the Church of England, and on the public-school system, for the sons of farmers and others engaged in commercial pursuits. The plans are for a building to accommodate 100 boarders, and capable of enlargement if found necessary. An expense of 7,000*l*. will be incurred, towards which sum 4,000*l*. have been already contributed. The site fixed for the erection of the new schools covers nearly eight acres, and is not many yards from the proposed station of the Guildford and Horsham Railway. It is on a gentle eminence, commanding, on the south, a view of the village of Cranley, with its church and massive tower, pleasant extent of country, with that garden-like appearance for which Surrey is so famed. The ground was given by Mr. G. Cubitt, M.P. The buildings, which will be of brick, with stone dressings, and tiled roofs, are designed eventually to accommodate 300 boys, with the necessary masters and attendants, and will be quadrangular in form. The south wing will comprise the upper and lower schools, with class-room and corridor connected with the chapel, forming a portion of this wing, and with the north and south wings. The west wing will comprise a large dining-hall, 80 feet by 30 feet, for the use of 300 boys, with dormitories over. At the junction of the south and west wings will be placed the master's house, the infirmary, and other offices. The east wing will contain the under-masters' rooms, with the lavatory and baths on the ground floor, and two stories of dormitories over. The north wing will contain the offices for the whole of the school; and the kitchen and its offices will be placed in the centre of the quadrangle. The building will be erected from the designs of Mr. W. Woodyer. The contractor for the whole is Mr. Robert Futcher, of Fisherton Works, Salisbury; and the work will be carried out under the superintendence of Mr. P. Bentlif, his manager. The contract is taken for 8,000*l*. The style of architecture is of the simplest form of the Decorated.

Derby.—The Rose-hill Church Schools, Derby, have been completed. The room is capable of accommodating as a place of worship about 200 persons, and is provided with pulpit, desk, communion table, lectern, &c.; and is to be lighted by four six-light coronæ. The school building contains on the upper floor a room 55 feet long by 20 feet wide, and 20 feet in height. It is warmed by two of Mr. Jobson's gill stoves. The lower floor contains another room of similar dimensions, but 15 feet in height, to be fitted up as a school-room. There are separate entrances, yards, and outbuildings, as well as playgrounds for boys and girls. The access from the ground floor to the upper room is by a stone staircase in the entrance hall. The style of the building is Early English, carried out in red brick and stone dressings. The original design, which was furnished by the Rev. A. Oliver, admits of the addition of class-rooms at any future time. The entire cost will be about 1,000*l*., exclusive of the cost of the land, &c. Messrs. Giles & Brookhouse were the architects employed, and Messrs. Thompson & Fryer the builders.

Birkenhead.—Mr. William Jackson, M.P., has given 5,000*l*. towards the erection of Ragged schools at Birkenhead.

THE PUBLICATIONS OF THE SOCIETY OF ANTIQUARIES.

Sir,—Can any one explain the foolish delay that takes place in the publication of the "Proceedings of the Society of Antiquaries?" The object of such an issue would seem to be, to inform the Fellows scattered over the kingdom of what passes more quickly than can be done by the *Archæologia*, which comes out about twice in the year; and yet in the number just now issued, reference is made throughout to the reading of papers already issued in that publication. In other words, it will scarcely be believed when I say that the last part of the 8vo. "Proceedings" just now issued of this thoroughly-appointed and well-to-do society is dated "January to April, 1862." Such backwardness might have been understood and excused in the times when poor old Mr. Carlyle was secretary; but now, with a young and able man in the berth, it seems neither understandable nor excusable.

An Old "Fellow."

THE EARLY WATER SUPPLY OF LONDON.

In the year 1236 we first hear of artificial water supply in the metropolis. In 1285, the conduit in Cheapside, which had been fifty years in building, was completed. This was castellated with stone and cisterned with lead, and was situate at the east end of Cheap, at the junction with Bucklersbury, opposite Mercers' Hall, then the hospital of St. Thomas d'Acona.

The following seems to be the best list which can be obtained showing the date of the erection of the other London conduits:—

A.D. 1401, the "Tun" in Cornhill, so called from a prison of that name adjacent. It was originally a spring, but at the above date was made a cistern of sweet water conveyed in pipes from Tyburn.

A.D. 1423, Billingsgate Conduit, opposite the market, where Sir Richard Whittington built a reservoir for the use of the market people. This can be scarcely called a conduit, but a spring running from a "boss" in Boss-alley, so named therefrom. A spring which formed part of this water supply may still be seen, together with portions of a Roman residence, in the basement of the present Coal Exchange.

A.D. 1423, Cripplegate Conduit, St. Giles's Churchyard. Here Sir Richard Whittington made a "boss of clear water" in the walls of the churchyard; and in 1438 Sir William Eastfield brought water here from Highbury. Near this was a spring called Crowder's Well.

In 1433, the priors and canons of St. Bartholomew's, in Smithfield, constructed a conduit for the supply of the monastery, bringing the water from their estate at Canonbury.

A.D. 1438, Fleet-street Conduit, opposite Shoe-lane, built by Sir William Eastfield, lord mayor this year. This conduit was supplied from Paddington. Stow says that this had a fair tower of stone, was garnished with images of St. Christopher, &c., "with sweet-sounding bells before them, whereupon by an engine placed in the towers, they divers hours of the day and night chimed such a hymn as was appointed."

Aldermanbury Conduit, opposite the south side of St. Mary's Church. This was also erected under the will of Sir W. Eastfield; was destroyed by the Great Fire, and rebuilt; but was removed early in the eighteenth century.

A.D. 1478, Fleet Bridge Conduit, at the foot of the bridge over the Fleet river. This was erected to receive the overflow of the conduit opposite Shoe-lane.

A.D. 1491, Gracechurch-street Conduit, nearly midway between Fenchurch-street and Eastcheap.

A.D. 1498, Holborn Conduit, at the foot of Snow-hill. This was rebuilt by William Lamb,—the founder of Lamb's Chapel, near Cripplegate,—a citizen and member of the Clothworkers' Company,—in 1577, at a cost of 1,500*l*. The conduit was supplied from a head near the Foundling Hospital, on the east side of Lamb's Conduit-street, close to where the "Lamb Tavern" now stands.

A.D. 1500, Stock's Market Conduit, at the Lombard-street corner of the site of the present Mansion House. After its destruction by the Great Fire, the conduit was rebuilt at the cost of Sir Robert Viner, lord mayor.

A.D. 1505, Bishopsgate Conduit, at the junction of the Wards Within and Without.

A.D. 1528, Coleman-street Conduit, at the junction with London ward.

A.D. 1535, Aldgate Conduit on the site of the

present Aldgate Pump. This was originally a well called St. Michael's, converted into a conduit with sweet water from Hackney. This conduit was also destroyed at the Great Fire, and the cost of regaining the water, and putting the place into order, is charged at 452*l.* 15s. 10d. In this instance, as in many others, the conduit seems to have been erected on some well-known spring or other water supply. The water which has supplied the draughts at Aldgate Pump is from the ancient spring. Many will not be sorry that those City draughts are no longer available.

Lothbury Conduit, at the west end of St. Margaret's Church.

A.D. 1568, Dowgate Conduit, opposite Skinners' Hall, first erected in 1508. Stow says that there was in his day recently erected an engine to convey Thames water into Dowgate Conduit. In 1574, the channel from this conduit was so swollen by a storm of rain, that a youth of eighteen was carried by it into the Thames, and was lost in spite of all endeavours.

A.D. 1582, the Cornhill Standard, at the junction of Cornhill with Gracechurch, Leadenhall, and Bishopsgate streets. This was erected by Peter Maurise, a Dutchman, who conveyed Thames water over the steeple of St. Magnus, London Bridge, by an "artificial forcier," to the north-west corner of London-wall, whence it flowed to the Standard, and poured out by four mouths opposite the respective streets. This water supply ran only during the ebb tide, and became at times a nuisance by reason of its flooding the streets. Pepys refers in his Diary to this conduit eighty years after its erection. It was reduced to ruins by the Great Fire of 1666, and does not seem to have been replaced.

A.D. 1610, Aldersgate Conduit, without the gate; the precise spot not known.

Soper-lane Conduit: the date of its erection uncertain; and the same may be said of the Conduit on Old Fish-street-hill. This latter was, however, cisterned with lead, and castellated with stone, for receiving Thames water.

From the above notes, we may infer that, during the Roman occupation of London, there was a sufficient supply of wholesome water from springs and rivulets, so that the works being unnecessary, we find here no traces of those magnificent aquaducts which are to be met with in various parts of the Continent of Europe. Up to 1236, the natural water supplies seem to have been the only means of providing water for the domestic use of the Londoners. Then, from the beginning and towards the end of the fifteenth century, it became needful, in consequence of the increased population, to procure water from other sources. Afterwards the Dutchman's water supply, and Sir Hugh Myddelton's New River water were obtained; and now, although several great water companies have been formed on both sides of the Thames, the cry still comes for the increased and more pure supply of this important element of human life. We are not without hope that before the reign of Queen Victoria has ended, we shall have a proper system organized for the supply of this vast city. B.

FALL OF A HOUSE AT ISLINGTON.

SIR,—Having had many inquiries (from the similarity of the name) whether I was the architect of the above building, at which the sad accident recently occurred, I shall be obliged by your allowing me to state, through your columns, that I was not the architect, and was not in any way connected with the business.

GEORGE B. WILLIAMS, Architect.

Frederick's-place, Old Jewry.

WOOD-CARVING COMPETITION.

SIR,—May I venture to make a remark respecting the wood-carving competition in Kensington Museum?

Miserere seats, when raised up, usually slant a little backwards, I think. In my specimen ("Gleaners") this fact was considered, and in its present perpendicular position the figures do not obtain their natural balance. Great attention is paid to this in placing a piece of sculpture upon its pedestal, and I think the same consideration should be afforded to a piece of wood-carving, however humble. J. M. LEACH.

COMPENSATION CASE.

ON the 10th inst., a jury was summoned to the Recorder's Court, Guildhall, to try a compensation case, Messrs. Jackson *v.* the City Extension Charing-cross Railway Company, Messrs. Jackson being the freeholders of Dowgate Iron Wharf, Thames-street, taken for the railway works.

The premises were let on lease at a net rent of 350*l.* per annum, with 6¾ years unexpired; but the last 15 years of the lease had been purchased for a premium of 2,300*l.* Mr. Sancton Wood was surveyor to the claimants, and evidence was given on the same side by Mr. Clifton, Mr. Horsey, Mr. l'Anson, Mr. M. Nelson, and Mr. R. Bell. The various estimates of these parties were from 15,394*l.* to 15,810*l.* For the Company, Mr. Pownall, Mr. Shaw, Mr. Lee, Mr. Vigors, and Mr. Ryde, the company's surveyor, were called. The first estimated the value of the freehold at 10,076*l.*; the latter, Mr. Ryde, at 9,240*l.* The company offered 9,500*l.*, which was declined. The verdict was for 14,630*l.*

The premises had a wharf with frontage towards the river of 41 feet by a depth of 183 feet, and a warehouse and dwelling-house on the land.

METROPOLITAN BUILDING ACT.

OPENINGS IN PARTY-WALL.

SOME years since, and before the coming into operation of the Metropolitan Building Act, 1855, an opening was made in the party-wall separating Nos. 66 and 67, Aldermanbury, in the City of London, in which were affixed double iron doors for the purpose of closing the opening when necessary.

In June, 1862, Messrs. Baggallay became the occupiers of No. 66, Aldermanbury, and shortly afterwards employed Messrs. Ashby & Horner to make two openings in the wall separating those premises from No. 6, Love-lane, each opening being 8 feet in height, and, in the one case, 2 feet 8 inches wide, and in the other 4 feet 10 inches wide. The premises, Nos. 66 and 67, Aldermanbury, and No. 6, Love-lane, were at that time wholly in the occupation of Messrs. Baggallay, and such premises, together, contained 323,000 cubic feet, but Nos. 66, Aldermanbury, and 6, Love-lane, together, contained less than 216,000 cubic feet.

In December, 1862, Mr. Woodthorpe, the district surveyor, served a notice on the builders to the effect that the openings in question were in contravention of the rules of the Building Act, inasmuch as they had been made in a party-wall dividing buildings which, taken together, contained more than 216,000 cubic feet, without the jambs, floor and head being formed of brick, stone, or iron, and the openings closed by two wrought-iron doors, of the thickness, and fixed in the manner, required by the provisions of the Building Act, and he called upon them to amend the work within forty-eight hours, accordingly. This not having been done, they were summoned before the magistrate at Guildhall, when they contended—

First—That the buildings upon which the works were done were not *new buildings* within the Metropolitan Building Act, 1855, and therefore that Act had no application, and they were not bound to comply with the requisitions of the district surveyor.

Secondly—That the making of the openings in question was not an alteration or work within the meaning of sec. 9 of the Building Act.

Thirdly—That the wall dividing No. 6, Love-lane from No. 66, Aldermanbury, was not, at the time the openings were made, a *party*-wall, but a *cross* wall within the meaning of the Act.

The magistrate, however, decided in favour of the district surveyor's views, and thereupon Messrs. Ashby & Horner appealed against the decision, and it was subsequently agreed that the question should be argued as a special case, which having been done on the 18th November, the Court gave judgment for the district surveyor, with costs.

Books Received.

Illustrated Edition of Hymns in Prose for Children. By Mrs. BARBAULD. London: John Murray, Albemarle-street. 1864.

A CHARMING edition indeed. Every page is illustrated, and the hymns, already extensively known, lend themselves peculiarly well to the requirements of the illustrators. The landscapes are by Mr. E. M. Whimperis, the figure subjects by Mr. R. Barnes, and the flowers and plants (very gracefully drawn) are mostly by Mr. T. Kennedy. The whole are well engraved by Mr. Jas. D. Cooper. We offer our praise to all concerned in the book.

A Welcome to H.R.H. the Princess of Wales, from the Poet Laureate. OWEN JONES, Illuminator. London: Day & Son, Lithographers to the Queen. 1863.

HERE, on seven ivory-like pages, besides the title-page, solidly bound in red and white, the contrast somewhat too violent, we have the Laureate's well-known lines beginning—

> "Sea-king's daughter from over the sea,
> Alexandra,"—

elegantly illuminated. Mr. Owen Jones's power of combining floral decorations seems inexhaustible, and he has that natural appreciation of the harmony of colours that whatever comes from his hand in this way is sure to be agreeable to the sight. The "Welcome" now before us is no exception to this rule, and will be placed on many tables,—graceful homage to our Rose of Denmark.

VARIORUM.

MESSRS. DAY have issued a new and cheaper, we may say cheap, edition of Cuthbert Bede's "Photographic Pleasures," full of sketches and full of fun. It is a pity the writing on the illustrations is not clearer.——"Lost, but not for Ever" (Nisbet & Co.), is a personal narrative "of Starvation and Providence" in the Australian mountain region, by the Rev. R. W. Vanderkiste. The author has a claim, inasmuch as he has been preaching the Gospel in the highways and byways of Australia during six years; but the tone of his volume is not agreeable. Still, he evidently knows his public (a special one), for this issue is marked "Third thousand."——"Journal of the Bath and West of England Society for the Encouragement of Agriculture, Arts, Manufactures, and Commerce. 1863. Vol. XI., Part 2. Ridgway, Piccadilly." This part contains a variety of papers, mostly useful to agriculturists. There is one, however, by Mr. Scott Burn, who, as our readers may recollect, is an amateur agriculturist, which requires more special notice. It is entitled "Some Cultural and Engineering Considerations connected with the Use of Water and Town Sewage in the Fertilization of Land." At the close of his practical and useful remarks on this subject, which refer chiefly to the mode of applying the sewage, and are illustrated, the author says:—"It may be a misfortune, but we believe that it is, nevertheless, a fact, that the view of the question which we have advanced forces us to the conclusion that the utilization of town sewage will not be carried out to a large extent in our day; seeing that the localities where it can be carried out in the way we have shown to be best are not likely to be often met with; so that, in many instances, its utilization at all will not be economically available. And further, that much of the supply, for years to come, even in the neighbourhood of localities thus favourably situate, must have the destination that it now has—the *river or the sea*—unless corporations convey it to or in the immediate neighbourhood of fields adapted locally and agriculturally to irrigation in its ordinary aspects."——"The Garden Oracle and Floricultural Year Book, 1864. Edited by Shirley Hibberd, F.R.H.S. London: Groombridge." Mr. Hibberd is the editor of the *Gardeners' Weekly Magazine*, and the author of various works on taste in gardening, &c., such as his essays on things homely and beautiful, rustic adornments for homes of taste, the town garden, &c.; and although this little "Year Book" is mostly compiled, still it is one showing some skill. Mr. Hibberd has introduced a new feature into such books by showing the progress of the seasons by the growth and flowering of plants in place of by saints' days, anniversaries, &c.; being, in fact, an arrangement of flowers for every day in the year, and some historical and horticultural information along with it. The book must be useful to all interested in gardening, whether in town or country.——From amongst the little Christmas story-books for youngsters sent to us for notice, we may pick out two or three,—"Fanny's Fancies," for instance, one of the Magnet Stories published by the Groombridges, and relating to a little lady whom one that knew her well,—the nurse of the "mite," to wit,—declared to be "a pickle, if ever there was one." Mrs. S. C. Hall is the author of this graceful little story.—"Peter Drake's Dream" is another of the choice little Magnet Stories, and by a lady—Frances F. Broderip, *née* Hood;—and "Bessy's Money," by the author of "Mary Powell" (Hall, publisher) is an interesting, though short and simple, tale of the time of Edward VI. and his successor, Mary; but better adapted for Protestant than Roman Catholic readers.

Miscellanea.

SMALL-ARMS MANUFACTORY AT BIRMINGHAM. At Small Heath, Birmingham, a small-arms manufactory is being built on the plan adopted at the Enfield and London Armoury Company's Works, where every part of the weapon is made in the factory. Being constructed by machinery, all the parts are alike, and can be interchanged.

THE NEW OPERA-HOUSE, PARIS.—We learn that the task of decorating the grand staircase of the New Opera at Paris has been confided to M. Cabanel, and the paintings in the *foyer* to M. Baudry. The group which is to surmount the dome will be executed by M. Perrault, and the statues of the two principal pavilions by MM. Cavelier and Aimé Millet.

A CHEAP MATERIAL FOR PUBLIC BUILDINGS. The people of Plymouth are desirous of building a new Guildhall, the present one being much too small. A site can be had near St. Andrew's Church, but the difficulty is the want of funds. This, however, might be overcome, we think, if the advice of one of the town councillors were taken, viz., to build it *out of the sound of the church bells.—Punch.*

Railway Traffic Receipts.—The traffic returns of railways in the United Kingdom, published for the week ending the 28th of November, amounted on 11,028 miles to 568,105*l.*; and for the corresponding week of 1862, on 10,518 miles, to 517,569*l.*, showing an increase of 450 miles, and of the sum of 50,536*l.* in the receipts.

Mosaic Work for London.—Mr. Grote, the historian of Greece, who is one of the council of University College, London, has offered to put up at his own expense, on the walls of the cloister of the college in Gower-street, a mosaic representation of scenes and persons of the Homeric poems, to be executed by the Parisian sculptor, the Baron de Triqueti.

Fever in Downpatrick, Ireland.—The proceedings of the local board of guardians, reported in the *Downpatrick Recorder*, show that fever prevails there, and is considerably on the increase. In the County Fever Hospital, also, this is the case. Ventilation and cleanliness, as well as aid in food and clothing among the poorer classes, are very properly urged by the *Recorder*.

Fall of a Scaffold at Glasgow.—A serious accident has occurred at a new building in course of erection at 298, Duke-street, Glasgow, whereby one man was dangerously, and several others seriously, injured. It appears that six labourers and a mason were carrying up a large stone to the top story of the building, and when they reached the fourth landing the scaffold upon which they were standing gave way, and the unfortunate men were precipitated through the joisting to the ground from a height of five stories.

Monumental. — A colossal statue of Daniel O'Connell, intended to be erected on the site of the old Court-house at Ennis, has been executed by Mr. Cahill, the Dublin sculptor. The statue is of white limestone. The head is copied from that of O'Connell's statue by Hogan, in the Royal Exchange. Mr. Cahill has enveloped the form in a cloak, with a fur collar, a characteristic feature of O'Connell's costume. The sculptor, according to the Dublin *Newsletter*, was for some years the chief assistant of the late John Hogan.

The Birmingham tall Chimneys.—A coroner's inquest has been held on the death of a person killed by the fall of Mr. Salt's chimney in Birchall-street during the late terrific gale. The verdict was "Accidental Death." Birmingham is crowded with tall chimneys, many of which may be wanting in some of the points regarded as deficient in the one erected by Mr. Salt. The chimney in Birchall-street had been erected by a regular stack builder, but it was 9 inches thick where it was considered that it only ought to have been 4½ inches, and tapered at the rate of but an inch in three yards, when the proper ratio was estimated at 1½ inch per yard.

A Smoky Chimney.—"I have just succeeded," says Mr. C. Butler Clough, in the *Mining Journal*, "in curing an obstinate smoky chimney by the aid of a zinc covering outside a common earthenware chimney-pot, having two openings in the zinc, one east and the other west. There are also two partitions or stoppers, north and south, to prevent the draft from escaping by the opposite opening. By the aid of this contrivance an upward current of air is carried outside the flue to its top, on the windward side of the chimney. I have now had the plan in use for some time, and in the face of several most violent storms not a particle of smoke or soot has come down the flue. In other rooms, the soot was blown on the floor to a large extent."

An Official Whim.—Manchester is greatly excited by one of the oddest acts of official tyranny we ever remember to have seen recorded. There is a place near the city known as Alderley Edge, which has grown into a kind of suburb for the wealthier citizens. It was prospering quietly enough, when suddenly all its letters were seized, carried to Congleton, and there re-directed to "Chorley," the new postal name ordered by the Postmaster-General. The unlucky inhabitants protested that the place had been called Alderley Edge since the Conquest, but without effect. The Postmaster-General is Lord Stanley, of Alderley; and, according to Manchester belief, he is determined that his lordly name shall not be borne by a thriving colony of vulgar villas which do not belong to him. The story seems incredible, but it is repeated in shoals of letters from the inhabitants of the place unlucky enough to possess a name which Lord Stanley wants to keep exclusively to his own property. Is there no right of action against the Postmaster-General as a common carrier?—*Spectator*.

TENDERS.

For alterations and additions, at the Freemasons' Hall, Great Queen-street, Lincoln's-inn-fields. Mr. Cockerell, architect. Quantities supplied by Messrs. Wilson & Goodchild:—

	Contract No. 1.	Contract No. 2.	Total.
Rigby	£19,640	£11,091	£30,731
Waller & Son	17,500	9,820	27,320
Lucas	16,720	9,100	25,820
Holland & Hannen	16,500	9,175	25,675
Mansfield	16,200	9,000	25,200
Lawrence	15,817	8,922	24,739
Rider (accepted)	15,280	8,890	24,170

For residence, St. George's Denes, Great Yarmouth, for Mr. Charles Woolverton. Mr. J. T. Bottle, architect:—

Messrs. Howes (Bricklayers)	£461 0 0
Laike (Mason)	87 5 0
Dumbleton (Slater)	39 10 0
Edwards (carpenter, joiner, &c.)	485 0 0

For additions to temporary Grammar School, Great Yarmouth, Mr. J. T. Bottle, architect:—

Cooper	£260 16 0
Leggett	258 0 0
Jackson	221 0 0

For building thirty-nine cottages at Southall-green, W., for Mr. H. P. Baxter. Quantities not supplied:—

Hunt	£4,105 10 0
Brown	4,100 0 0
Gibson	3,875 0 0
Bell	3,821 18 0
T. & E. Brown	3,819 0 0
Nias	3,756 0 0
Rowe	3,456 10 0
Macklin	3,400 0 0
Winfield	3,199 0 0
Hanson (accepted)	3,035 0 0
Bachelor & Smith	2,856 10 0

For new warehouse in Southwark-street, for Messrs. Wigan & Cosier. Mr. R. P. Pope, architect. Quantities supplied:—

Tracey & Co.	£18,847 0 0
Mansfield	18,330 0 0
Axford & Co.	18,230 0 0
Little	18,130 0 0
Brown & Robinson	18,009 0 0
Sharpington & Cole	17,555 0 0
Rigby	17,050 0 0
Watts	16,975 0 0
Myers	16,475 0 0

For Queen-street Congregational Church, Wolverhampton. Mr. G. Bidlake, architect:—

Cockerell & Sons	£7,994 0 0
Higham, Brothers	7,600 0 0
Barnsley & Sons	7,416 0 0
Trow & Sons	7,380 0 0

For the erection of two houses, warehouse, and public rooms, in Winchester-street, Southwark, for the trustees of the Borough Market. Mr. E. Habershon, architect:—

Brass	£3,625 0 0
Patman & Fotheringham	3,586 0 0
Macey	3,439 0 0
Bagnley	3,423 0 0
Newman & Mann	3,385 0 0
Sawyer	3,374 0 0
Downs	3,193 0 0
Hack & Son	3,187 0 0
Carter & Son	3,172 0 0

For proposed alterations and additions to premises, numbered from 113 to 117 inclusive, on the north-east side of the Edgeware-road, for Mr. Edward Grove. Mr. Isaac Bird, architect:—

		Credit for old Materials.
Tidy	£4,926	£154
Ashby & Son	4,515	95
Thompson	4,400	63
Gammon	4,390	105
Newman & Mann	4,323	112
Myers & Son	4,260	55
Williams	4,200	106
Higgs	4,132	—
Brown	3,977	—
Tracery & Co.	3,829	117

For new station, at Sutton, for the Banstead and Epsom Downs Railway. Quantities by Messrs. Oliver and Paice:—

Sealy	£1,110 0 0
Lamble	1,073 0 0
Holmes	1,070 0 0
Glenn, Brothers	990 0 0
Ring	951 0 0
Dowel	949 0 0
Butcher	945 0 0

TO CORRESPONDENTS.

"Going Along" will be continued in our next.

W. F. P.—R. L. B. — I. P. P. — J. A. G. — J. P. — Hampshire Hog.—Messrs. E.—J. S.—J. T. B.—W. T. — Mr. F. — An Art-Lover.—Mr. B.—W. W.—W. C.—Dr. M.—Dr. G.—Dr. H.—Quondam.—J. F. (next week).—C. W. P. (there is such a journal. Apply to any London newsman).—W. H. S. (No).

We are compelled to decline pointing out books and giving addresses.

All statements of facts, lists of tenders, &c., must be accompanied by the name and address of the sender; not necessarily for publication.

TO SUBSCRIBERS.

CHRISTMAS WEEK. "The Builder" for the week ending DECEMBER 26th will be published on Thursday, 24th inst., at the usual hour.

ADVERTISEMENTS for insertion in that issue must therefore reach the Office before FIVE O'CLOCK, p.m., on Wednesday, 23rd inst.

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